

Draft Environmental Impact Report

SCH #2020099017

Volume 1
Chapters 1 through 10

KUDU SOLAR PROJECT
by 69SV 8ME LLC (8Minute Energy) (PP20405)

Zone Change Case No. 14, Map No. 152;
Conditional Use Permit No. 28, Map No. 152;
General Plan Amendment No. 10, Map No. 152 (Circulation);
Non-Summary Vacations of Public Access Easements



Kern County
Planning and Natural Resources Department
Bakersfield, California

November 2021

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Lorelei H. Oviatt, AICP, Director
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**PLANNING AND NATURAL
RESOURCES DEPARTMENT**

Planning
Community Development
Administrative Operations

November 19, 2021

File: ZCC #14, Map 152; CUP #10, Map 152; GPA #10, Map 152 (Circulation); Non-summary Vacations

S.D.: #2 - Scrivner

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the Kudu Solar Project by 69SV 8ME LLC (8Minute Energy) (SCH #2020099017)

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 500 megawatt (MW) alternating current (AC) utility-scale solar power with an up to 600 MW-hour (MWh) energy storage capacity on approximately 1,955 acres of privately-owned land in portions of unincorporated Kern County and the City of California City.

The proposed Kudu Solar Project site is located north of the California City Municipal Airport. The majority of the project site is bisected to the east-west by Washburn Boulevard (which is also the Kern County/California City limit line) and to the north-south by Neuralia Road. State Route 14, a four-lane divided highway located approximately one mile to the west, provides regional access to the project site. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site. The project site is located on the California City North and Mojave North East 7.5 minute USGS Quadrangles at Township 31S, Range 37E – portions of Sections 14, 15, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and Township 32S, Range 37E – portions of Sections 1, 2, 3, 4, 9, 10, 11, 12 Mount Diablo Base and Meridian, County of Kern, State of California.

The project proponent is requesting the following:

Kern County (Lead Agency):

- a. Zone Change Case No. 14, Map No. 152 as follows:
 - From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 164.76 acres;
 - From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and
 - From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
- b. Issuance of Conditional Use Permit No. 28, Map No. 152 to allow for the construction and operation, within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern

County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance.

- c. General Plan Amendment No. 10, Map No. 152 to the Circulation Element of the Kern County General Plan to remove road reservations on section and mid-section lines within the Kern County project boundaries.
- d. Nonsummary Vacation, Map No. 152 to remove public access easements.

California City (Responsible Agency):

- a. The City of California City is a Responsible Agency under CEQA. For the parcels within the city limits of the City of California City, the City will require the project proponent to obtain a Conditional Use Project (CUP) from the City to allow for the construction and operation of a solar facility, in the O/RA (Openspace/Residential Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity (CUP 19-04). On May 11, 2021, the City of California adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use in O/RA zoned districts.
- b. The project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

The project area is adjacent to the previously approved Eland 1 Solar Project and south of the existing Springbok 1 & 2 Solar Projects. The Kudu Solar Project would potentially share infrastructure with the Eland 1 Solar Project, including but not limited to substations and gen-tie lines that would terminate at the Los Angeles Department of Water and Power's Barren Ridge Substation. 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), inverter stations, and operations and maintenance facilities.

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 **January 3, 2022, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at (661) 862-5041 or via email at TolentinoM@kerncounty.com.

Sincerely,

Mark Tolentino, Planner II
Advanced Planning Division

GPA #10; ZC #14; CUP #25, Map #152
WO #PP20405 (EIR 09-19 - Kudu Solar)
I:\Planning\WORKGRPS\WP\Susan\eir0
9-19jj.ec.doc
Sc 08/05/20

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

Bakersfield City Planning Dept
1715 Chester Avenue
Bakersfield, CA 93301

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

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

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

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

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

City of Shafter
336 Pacific Avenue
Shafter, CA 93263

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

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

City of Wasco
764 E Street
Wasco, CA 93280

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

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

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

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

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

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

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

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

U.S. Bureau of Land Management
Ridgecrest Field Office
300 South Richmond Road
Ridgecrest, CA 93555

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
412 TW, Bldg 2750, Ste 117-14
195 East Popson Avenue
Edwards AFB, CA 93524

Federal Aviation Administration
Western Reg Office/
777 South Aviation Boulevard
Suite 150
El Segundo, CA 90245

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

U.S. Fish & Wildlife Service
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, CA 92262

Eastern Kern Resource Cons Dist
300 South Richmond Road
Ridgecrest, CA 93555-4436

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

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

U.S. Army Corps of Engineers
P.O. Box 997
Lake Isabella, CA 93240

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

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

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

State Clearinghouse
Office of Planning and Research
1400 - 10th Street, Room 222
Sacramento, CA 95814

Caltrans/Dist 9
Planning Department
500 South Main Street
Bishop, CA 93514

Caltrans/
Division of Aeronautics, MS #40
P.O. Box 942873
Sacramento, CA 94273-0001

California State University
Bakersfield - Library
9001 Stockdale Highway
Bakersfield, CA 93309

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

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

California Energy Commission
James W. Reed, Jr.
1516 Ninth Street
Mail Stop 17
Sacramento, CA 95814

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

State Lands Commission
100 Howe Avenue, Ste 100-South
Sacramento, CA 95825-8202

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

California Regional Water Quality
Control Board/Lahontan Region
15095 Amargosa Road - Bld 2, Suite 210
Victorville, CA 92392

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

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

Kern County Administrative Officer

Kern County
Agriculture Department

Kern County Airports Department

Kern County
Env Health Services Department

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County Library/Beale
Local History Room

Kern County Fire Dept
David Witt, Fire Chief

Kern County Fire Dept

Kern County Parks & Recreation

Kern County Library/Beale
Andie Sullivan

Kern County Library
California City Branch
9507 California City Boulevard
California City, CA 93505

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

Kern County Sheriff's Dept
Administration

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

Muroc Unified School Dist
17100 Foothill Avenue
North Edwards, CA 93523

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

Mojave Unified School Dist
3500 Douglas
Mojave, CA 93501

Local Agency Formation Comm/LAFCO
5300 Lennox Avenue, Suite 303
Bakersfield, CA 93309

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

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

East Kern Air Pollution
Control District

Antelope Valley-East Kern
Water Agency
6500 West Avenue N
Palmdale, CA 93551

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

East Kern Airport Dist
Attention Stuart Witt
1434 Flightline
Mojave, CA 93501

California City Airport
22636 Airport Way, #8
California City, CA 93505

Mojave Air and Space Port
1434 Flightline
Mojave, CA 93501

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

East Kern Airport Dist Engineer
3900 Ridgemoor Avenue
Bakersfield, CA 93306

Northcutt and Associates
4220 Poplar Street
Lake Isabella, CA 93240-9536

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

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

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

Desert Tortoise Preserve Committee
4067 Mission Inn Avenue
Riverside, CA 92501

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

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

Southern California Edison
Planning Dept.
421 West "J" Street
Tehachapi, CA 93561

Native American Heritage Council
of Kern County
Attn: Gene Albitre
3401 Aslin Street
Bakersfield, CA 93312

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

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

Southern California Edison
2244 Walnut Grove, Ave, GO-1 Quad 2C
Rosemead, CA 91770

Verizon California, Inc.
Attention Engineering Department
520 South China Lake Boulevard
Ridgecrest, CA 93555

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

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

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

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

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

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

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

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

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

San Fernando Band of Mission Indians
Attn: John Valenzuela, Chairperson
P.O. Box 221838
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Matthew Gorman
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1346 E. Walnut Street, Suite 220
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Accountability
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Bakersfield, CA 93301

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Attn: Todd Quelet
16922 Airport Boulevard
Mojave, CA 93501

National Public Lands News
941 E. Ridgecrest Blvd
Inyokern, CA 93555

Pleistocene Foundation
2362 Lumill Street
Ridgecrest, CA 93555

Raymond Kelso/
Pleistocene Foundation
2362 Lumill Street
Ridgecrest, CA 93555

U.S. Air Force
Attn: David Bell/AFCEC CZPW
Western Regional/Leg Branch
510 Hickman Ave., Bld 250-A
Travis AFB, 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, Region 9
Coordinator
Office of Strategic Integration
721 - 19th Street, Room 427
Denver, CO 80202

U.S. Navy
Attn: Steve Chung
Regional Community & Liaison Officer
1220 Pacific Highway
San Diego, CA 92132-5190

U.S. Marine Corps
Attn: Patrick Christman
Western Regional Environmental Officer
Building 1164/Box 555246
Camp Pendleton, CA 92055-5246

David Walsh
22941 Banducci Road
Tehachapi, CA 93561

Terra-Gen
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11512 El Camino Real, Suite 370
San Diego, CA 92130

Renewal Resources Group
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113 South La Brea Avenue, 3rd Floor
Los Angeles, CA 90036

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

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

EDP Renewables Company
53 SW Yamhill Street
Portland, OR 97204

Wind Stream, LLC
Albert Davies
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Santa Rosa, CA 95404

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Wayne Mayes, Dir Tech Serv
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Portland, OR 97209

Michael Strickler, Sr Project Mgr
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Portland, OR 97209

Recurrent Energy
Seth Israel
300 California Street, 8th Floor
San Francisco, CA 92109

Tehachapi Area Assoc of Realtors
Carol Lawhon, Assoc Exe, IOM
803 Tucker Road
Tehachapi, CA 93561

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

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

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

Structure Cast
Larry Turpin, Sales Mgr
8261 McCutchen Road
Bakersfield, CA 93311

Ngo Catherine Phuong
13355 Durango Pl
Cerritos, CA 90703-8640

Torres Martinez Desert Cahuilla Indians
Attn: Michael Mirelez, Cultural
Resources Coordinator
P.O. Box 1160
Thermal, CA 92274

San Manuel Band of Mission Indians
Attn: Jessica Mauck, Cultural
Resources Analyst
26569 Community Center Drive
Highland, CA 92346

Twenty-Nine Palms Band of Mission
Indians
Attn: Darrell Mike, Tribal Chairman
46-200 Harrison Place
Coachella, CA 92236

Twenty-Nine Palms Band of Mission
Indians
Attn: Anthony Madrigal Jr., Tribal
Grants Administrator
46-200 Harrison Place
Coachella, CA 92236

Tejon Indian Tribe
Attn: Collin Rambo, Cultural Resource
Management Technician
P.O. Box 640
Bakersfield, CA 93309

Big Pine Paiute Tribe of the Owens Valley
Attn: James Rambeau, Sr., Chairperson
P.O. Box 700
Big Pine, CA 93513

Big Pine Paiute Tribe of Owens Valley
Attn: Sally Manning, Env. Director
P.O. Box 700
Big Pine, CA 93513

Big Pine Paiute Tribe of the Owens Valley
Attn: Danelle Gutierrez, THPO
P.O. Box 700
Big Pine, CA 93513

Chumash Council of Bakersfield
Attn: Julio Quair, Chairperson
729 Texas Street
Bakersfield, CA 93307

Wuksache Indian Tribe/ Eshom Valley Band
Attn: Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

Kitanemuk & Yowlumne Tejon Indians
Attn: Delia Dominguez, Chairperson
115 Radio Street
Bakersfield, CA 93305

Fernandeno Tataviam Band of Mission Indians
Attn: Jairo F. Avila, THPO
1019 Second St. Suite 1
San Fernando, CA 91340

Kern Valley Indian Community
Attn: Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240

San Manuel Band of Mission Indians
Attn: Jessica Mauck, Director-CRM Dept.
26569 Community Center Dr.
Highland, CA 92346

Santa Rosa Rancheria Tachi Yokut Tribe
Attn: Lee Sisco, Chairperson
P.O. Box 8
Lemoore, CA 93245

Tejon Indian Tribe
Attn: Octavio Escobedo III, Chairperson
P.O. Box 640
Bakersfield, CA 93309

Tubatulabals of Kern Valley
Attn: Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella, CA 93240

Kern Valley Indian Community
Attn: Brandy Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

Vak titvu titvu vak tilhini – Northern
Chumash Tribe
Attn: Mona Olivas Tucker, Chairwoman
660 Camino Del Rey
Arroyo Grande, CA 93420

**NOTICE OF AVAILABILITY FOR PUBLIC REVIEW AND HEARING ON
THE DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE PROPOSED KUDU 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: EIR09-19: Kudu Solar Project by 69SV 8ME LLC (8Minute Energy); Zone Change Case No. 14, Map No. 152; Conditional Use Permit No. 10, Map No. 152; General Plan Amendment No. 10, Map No. 152 (Circulation); and Nonsummary Vacations of Public Access Easements (State Clearinghouse No. 2020099017)

PROJECT LOCATION: The proposed Kudu Solar Project site is located north of the California City Municipal Airport. The majority of the project site is bisected to the east-west by Washburn Boulevard (which is also the Kern County/California City limit line) and to the north-south by Neuralia Road. State Route 14, a four-lane divided highway located approximately one mile to the west, provides regional access to the project site. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site. The project site is located on the California City North and Mojave North East 7.5 minute USGS Quadrangles at Township 31S, Range 37E – portions of Sections 14, 15, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and Township 32S, Range 37E – portions of Sections 1, 2, 3, 4, 9, 10, 11, 12 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: February 10, 2022
TIME: 7:00 P.M. or soon thereafter
LOCATION: Chambers of the Board of Supervisors
Kern County Administrative Center, First Floor
1115 Truxtun Avenue, Bakersfield, CA 93301

And/or submitting written comments to the project planner identified below prior to the close of the public comment period on January 3, 2022, at 5:00 p.m. Testimony at future public hearings may be limited to those issues raised during the public review period either orally or submitted in writing.

HOW TO COMMENT: You may provide testimony at the public hearing on the date and time specified above or provide written comments prior to the close of public comment period on January 3, 2022, at 5:00 p.m. to:

**Kern County Planning and Natural Resources Department
ATTN: Mark Tolentino, Planner II
2700 "M" Street, Suite 100, Bakersfield, CA 93301
Phone: (661) 862-5041
E-mail: tolentinom@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 infrastructure necessary to generate up to 500 megawatts of renewable energy and 600 megawatt hours of energy storage capacity on approximately 1,955 acres of privately-owned land. The Kudu Solar Project would potentially share infrastructure with the adjacent Eland 1 Solar Project, including but not limited to substations and genetic lines that would terminate at the Los Angeles Department of Water and Power's Barren Ridge Substation. 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), inverter stations, and operations and maintenance facilities.

The project proponent is requesting the following:

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- a. Zone Change Case No. 14, Map No. 152 as follows:
 - From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 164.76 acres;
 - From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and
 - From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
- b. Issuance of Conditional Use Permit No. 28, Map No. 152 to allow for the construction and operation, within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance.
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- d. Nonsummary Vacation, Map No. 152 to remove public access easements.

California City (Responsible Agency):

- a. The City of California City is a Responsible Agency under CEQA. For the parcels within the city limits of the City of California City, the City will require the project proponent to obtain a Conditional Use Project (CUP) from the City to allow for the construction and operation of a solar facility, in the O/RA (Openspace/Residential Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up

to 500 MW of alternating current power and 600 MW hours of storage capacity (CUP 19-04). On May 11, 2021, the City of California adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use in O/RA zoned districts.

- b. The project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

ENVIRONMENTAL REVIEW FINDINGS: Anticipated significant and unavoidable impacts on Aesthetics (Project and Cumulative); Air Quality (Project and Cumulative); Biological Resources (Cumulative); Hazards and Hazardous Materials (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
MOJAVE DESERT NEWS

MT:sc (11/19/21)

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

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GPA #10; ZC #14; CUP #25, Map #152
WO #PP20405 (EIR 09-19 - Kudu Solar)
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Sc 08/27/20

469 170 06 00 5
2NGEL FAMILY TR
3902 PEACOCK RIDGE RD
CALABASAS CA 91301

470 322 14 00 5
68SF 8ME LLC
5455 WILSHIRE BL STE 2010
LOS ANGELES CA 90036-4220

302 325 31 00 9
ABANTO OLAVI PERCY
1307 SUMMERTIME LN
CLOVER CITY CA 90230

470 322 13 00 2
ABRAMS STUART WILLIAM
511 CASTANO CORTE
LOS ALTOS CA 94022

302 306 11 00 2
ABUTALEB FAM TR
3620 CALMBROOK LN
DIAMOND BAR CA 91765-3770

302 470 01 00 1
ACADEMIA MARIJESS B ET AL
11863 THOMAS HAYES LN
SAN DIEGO CA 92126-1146

470 322 01 00 7
ADAMS CAROL ANN
25067 DE WOLFE RD
SANTA CLARITA CA 91321

470 080 15 00 5
AEK GLOBAL INV LLC
4603 HURFORD TR
ENCINO CA 91436-3345

470 302 01 00 1
AHTIRSKI MARCO M REV LIV TR
12055 VENTURA PL
STUDIO CITY CA 91604-2602

470 020 04 00 5
AMBER JACK REV LIV TR
166 5 N ARNEZ DR
BEVERLY HILLS CA 90211

470 030 03 00 5
AMBER KATHERINE LIV TR
3603 SURFWOOD RD
MALIBU CA 90265-5652

302 305 10 00 2
AMBRIZ ANTONIO TINAJERO
REVOCABLE TRUST
14901 PURDY ST
MIDWAY CITY CA 92655-1348

470 030 01 00 9
ANDARI GHAZI N
1328 ALLEN AV
GLENDALE CA 91201

470 151 07 00 9 **DUP**
ANDERSON SANDRA J
ADDRESS UNKNOWN

302 341 24 00 7
ANDREWS WALTER L & JOYCE H TR
20643 CHERL DR
CUPERTINO CA 95014

302 020 12 00 2
ANOTHER MILLION DOLLAR CO LLC
8537 SATINWOOD AV
CALIF CITY CA 93505-3810

302 480 19 00 7 **DUP**
ANOTHER MILLION DOLLAR CO LLC
8537 SATINWOOD AV
CALIFORNIA CITY CA 93505-3810

302 303 02 00 5
APOTHIO LLC
74 S BELLERIVE DR
PERU IN 46970-6918

470 151 15 00 2
ARAGON GENARO & GUADALUPE
PO BOX 116
TECUMSEH NE 68450-0116

302 470 18 00 1
ARCE CARLOS L & MARIA C
12224 SHERIDAN ST
NORWALK CA 90650

470 330 07 00 4
AZAM JAVED & ROOBILA NAZ
FAMILY TRUST
110 STONECREST CI
KEEDYSVILLE MD 21756-1531

302 325 34 00 8
B N M FORSTIE FAMILY TRUST
605 CALLE JUAREZ
SAN CLEMENTE CA 92673-3021

470 360 01 00 5
BABASHOFF JOHN P & DIANE L
TRUST
73135 DEER GRASS DR
PALM DESERT CA 92260-6087

302 306 22 00 4
BAKER TERRANCE J & PAMELA J
6945 HARCO ST
LONG BEACH CA 90808

302 303 10 00 8
BARZO TODD A
4515 S DURANGO DR APT 1080
LAS VEGAS NV 89147

302 303 11 00 1
BAUTISTA FAMILY TRUST
1912 N EVELYN CT
SANTA MARIA CA 93454-5510

470 322 34 00 3
BEAVER LYNDEE
77063 MOSBY CREEK RD
COTTAGE GROVE OR 97424-9412

302 325 07 00 0
BELL HAROLD R & DIANA L
5018 EAST AVE R-2
PALMDALE CA 93552-3829

302 325 17 00 9
BENITEZ MARIA A
512 S HARRIS AV
COMPTON CA 90221

470 322 38 00 5
BERG DONALD L
16769 DAZA DR
RAMONA CA 92065-4613

470 312 02 00 7
BESSONART DENIS & J REV LIV TR
9709 SAN YSIDRO LN
BAKERSFIELD CA 93312

302 341 29 00 2 **DUP**
BESSONART DENIS & JULIE LIVING
TRUST
9709 SAN YSIDRO LN
BAKERSFIELD CA 93312

302 341 06 00 5
BIG WEST CORP
1141 POMONA RD # H
CORONA CA 92882

470 090 05 00 9
BIG WEST CORP
1403 N LAS FLORES DR
SAN MARCOS CA 92069-5943

470 322 32 00 7 **DUP**
BIG WEST CORPORATION
1141 POMONA RD U H
CORONA CA 92882-7148

302 470 06 00 6
BILBAENO CAROLINA G
5601 NATOMAS BL APT 1114
SACRAMENTO CA 95835-2246

470 151 10 00 7
BIVINS EUGENE L
1650 LUCILE AV
LOS ANGELES CA 90026-1037

302 480 17 00 1
BLY LARRY W
119 JONES ST
BODFISH CA 93205-9708

302 353 02 00 0
BONNER TRUST
P O BOX 7508
VENTURA CA 93006

302 020 22 00 1
BRADLEY JACQUELINE M
7548 TOTIER CREEK FARM RD
SCOTTSVILLE VA 24590-3962

470 152 11 00 7
BRANSON PAUL S
PO BOX 1355
CLEARLAKE OAKS CA 95423-1355

470 322 03 00 3
BREMER DAVID P
32 NELSON MANOR LN
MIDDLETOWN PA 17057

302 480 07 00 2
BROBERG WARREN K REVOCABLE
LIVING TRUST
5338 E WINDSTONE TL
CAVE CREEK AZ 85331-2421

302 480 08 00 5 **DUP**
BROBERG WARREN K REVOCABLE
LIVING TRUST
5338 WINDSTONE TL
CAVE CREEK AZ 85331

470 100 09 00 3
BROWN FMLY BY PASS TR
3705 HOLLINGSWORTH DR
ALTADENA CA 91001

470 312 10 00 0
BROWN FMLY REV LIV TR
11171 OAKWOOD DR F203
LOMA LINDA CA 92354

470 152 23 00 2
BROWN MICHAEL L & KATHLEEN A
TRUST
4632 W TALMADGE DR
SAN DIEGO CA 92116-4833

302 325 40 00 5
BROWN WILLIAM R & BERNELL
8726 OSWEGO ST
SUNLAND CA 91040-2617

470 130 13 00 3
BULGERIN DAVID TRUST
3315 CHANATE RD STE 1A
SANTA ROSA CA 95404-1736

302 460 16 00 2
BULOSAN JERRY S & HEDELIZA TR
2327 FLINTRIDGE DR
GLENDALE CA 91206-1024

302 290 10 00 5
BURKE REV TRUST
7932 MOONMIST CI
HUNTINGTON BCH CA 92648-5436

302 470 12 00 3
BURUSCO MARY M TRUST
1509 LA LOMA RD
PASADENA CA 91105-2135

470 380 07 00 9
CABLE JAMEY
6824 FIREBAUGH ST
BAKERSFIELD CA 93313

302 342 14 00 5
CALIF LAND FUTURES INC
3921 SUNSET LN
OXNARD CA 93035-3948

469 170 07 00 8
CAMACHO PUREZA
14041 DON JULIAN RD
LA PUENTE CA 91746-2805

302 470 14 00 9
CAMARA MARGARET ELDRED TR
PO BOX 1024
PISMO BEACH CA 93448-1024

302 306 19 00 6
CANCILLA FAMILY TRUST
15546 SARANAC DR
WHITTIER CA 90604-3221

470 151 18 00 1
CARRANZA OLGA G
4033 W 160TH ST
LAWNDALE CA 90260-2726

470 360 03 00 1
CARRILLO JOSUE B & TERESA
5450 TRUMPET CT
CASTRO VALLEY CA 94552-1724

469 240 29 00 2
CARRILLO SANTIAGO
1900 E ORO DAM BL STE 12
OROVILLE CA 95966-5934

469 170 12 00 2
CASTILLO DIONEL REV TRUST
4438 VISTA LARGO
TORRANCE CA 90505

302 306 23 00 7
CERVANTES MARIA E
12425 LELAND AV
WHITTIER CA 90605-4218

470 040 02 00 5
CHACANACA JACK L & DEENA C
26201 TUOLUMNE ST
MOJAVE CA 93501

470 040 01 00 2
CHACANAGA JACK L
26201 TUOLUMNE ST
MOJAVE CA 93501

DUP

469 170 19 00 3
CHEN YINGLING
P O BOX 1542
ARCADIA CA 91077

470 322 33 00 0
CHIN CAROLYN & CYNTHIA J
110 MILTON ST
SAN FRANCISCO CA 94112-1429

302 305 13 00 1
CHONG SRUN CHEA
2935 N MONTEVERD RD
COVINA CA 91724

302 460 01 00 8
CHOW WILLIAM Y T & JEANETTE LI
REV TR
1813 SUNSHINE CT
GLENDALE CA 91208-2430

216 010 28 00 8
CITY OF CALIF CITY
ADDRESS UNKNOWN

DUP

470 151 17 00 8
CLERICO ROBERT W TR
13503 HINAULT DR
BAKERSFIELD CA 93314-6607

470 322 04 00 6
COLLINS RICHARD L & KAREN L
LIVING TRUST
8309 MUSCAT CT
REDDING CA 96001-9576

470 152 13 00 3
COOK JANET F
740 EDGEWATER DR U D
CHULA VISTA CA 91913

470 151 03 00 7
CORLESS DOROTHY
1040 W AMBASSADOR DR
HANFORD CA 93230-9186

461 220 34 00 4
CRAWFORD PAULA & STANLEY JR
8806 RAMSGATE AV
LOS ANGELES CA 90045

302 470 09 00 5
CRISSMAN TIMOTHY JAMES
24262 WALNUT ST # 1
NEWHALL CA 91321

302 341 11 00 9
CROTHERS ANNIE
117 LAGUNA PL
PAGOSA SPRINGS CO 81147-8852

302 020 10 01 5
DA ELITE GROUP LLC
1013 ATTICUS AV
HENDERSON NV 89015-5962

302 341 13 00 5
DAVI FAMILY TRUST
201 CHADBOURNE AV APT 216
MILLBRAE CA 94030-2572

302 460 03 00 4
DE GUZMAN LIZA ET AL
ADDRESS UNKNOWN

DUP

470 182 02 00 0
DEGUCHI KEIKO TR
3301 TERRACE RIDGE LN
LONG BEACH CA 90804-1203

470 152 21 00 6
DEIST PAULA OFFERMAN
2137 WATERCREST DR
AUBURN AL 36830-4116

470 152 25 00 8
DEL SOL PROPERTIES INC
12121 WILSHIRE BL STE 600
LOS ANGELES CA 90025

470 151 16 00 5
DEL SOL PROPERTIES INC
10415 STAMPS RD
DOWNEY CA 90241

470 350 03 00 8
DELMENDO NICETO FAM TR
2910 23RD AV
SACRAMENTO CA 95820

302 306 12 00 5
DESMARAIS ALBERT TRUST 1995 ET
AL
39793 PAMPERO WY
TEMECULA CA 92592

469 230 03 00 3
DEUTSCH FAMILY TR
10550 ASHTON AV
LOS ANGELES CA 90024

470 152 29 00 0
DEUTSCH KONRAD B FAMILY TR
6531 CHEAMES WY
SAN DIEGO CA 92117

469 240 22 00 1
DIELISSEN ROBERT R
3000 DANVILLE BL # F
ALAMO CA 94507-1572

302 341 12 00 2
DIRVEN JOPIE
5473 S JONES BL APT 1098
LAS VEGAS NV 89118-0550

470 010 11 00 2
DISCOUNTLAND INC
2261 MONACO DR
OXNARD CA 93035-2915

470 181 07 00 8
DODSON MARK D & JULIE
4145 W 163RD ST
LAWN DALE CA 90260

470 130 15 00 9
DOHERTY KIMBERLY A
28491 FALCON CREST DR
SANTA CLARITA CA 91351

470 152 08 00 9
DREISBACH RICHARD & ELIZABETH
REV TR
1681 THOMAS AV
SAN DIEGO CA 92109

470 130 02 00 1
DUGAN JEROLYN ET AL
4532 THRUSH DR
INDIANAPOLIS IN 46222-1249

470 020 08 00 7
DULBERG MARK R
130 EL TOYONAL
ORINDA CA 94563

470 370 01 00 8
DURAN CRYSTAL
7247 TAMPA AV
RESEDA CA 91335

470 152 26 00 1
DYMOTT FAMILY TR
23742 CALISTOGA PL
RAMONA CA 92065

302 290 15 00 0
EASSA MICHAEL
32433 MICHIGAN ST
ACTON CA 93510-1857

470 321 08 00 1
EKWUE ANN MARIE
ADDRESS UNKNOWN

DUP

302 303 12 00 4
ELEGADO BERNABE & ERNESTO
12516 RUBENS AV
LOS ANGELES CA 90066

302 290 05 00 1
EMERALD JENNY E & RICHARD J TR
1409 CAMPER DR
WEST COVINA CA 91792

302 460 15 00 9
EPSTEIN NING G REVOCABLE TRUST
3 FOXGLOVE WY
IRVINE CA 92612-2712

470 350 04 00 1
EQUITY TR CO CUSTDN FBO STEVEN
HILBON IRA
24241 RHONA DR
LAGUNA NIGUEL CA 92677-4052

470 090 11 00 6
ESTRADA JAVIER & GLORIA
81784 VILLA GIARDINO DR
INDIO CA 92203

470 090 02 00 0
FAN LOUIS S S
ADDRESS UNKNOWN

DUP

302 470 03 00 7
FDR LAND CO
38430 PUMA LN
PALMDALE CA 93551

469 170 02 00 3
FERNANDEZ CESAR T & TERESA
9016 CECILIA ST APT I
DOWNEY CA 90241-3930

470 130 04 00 7
FERRER BERNARDO B TR
6323 DAHLIA CT
WESTMINSTER CA 92683-3664

302 480 14 00 2
FERRIS TRUST
3916 JIM BOWIE RD
AGOURA HILLS CA 91301-3606

470 321 14 00 8
FINKE DALE J
1618 MERIDIAN ST
CHARLOTTESVILLE VA 22902-6340

461 220 16 00 2
FINKLE RICHARD GARY
170 BRANDYWINE PL
CLAYTON CA 94517-2220

302 341 39 00 1
FISH JAMES R ET AL
842 E WHITEDOVE LN
FRESNO CA 93730-0727

470 152 10 00 4
FISHLER THOMAS G & ALICE LIV TR
18 GOLF AV
SAN RAFAEL CA 94903

470 152 28 00 7
FOBBS TAMAKI
315 CAMINO DE LA LUNA
PERRIS CA 92571-2993

470 322 22 00 8
FOLETTA JAMES R
125 MEADOW CREST LN
WALNUT CREEK CA 94595-2656

302 342 20 00 2
FONSECA CHARLES B
7 MANOR RD
FAIRFAX CA 94930

470 322 39 00 8
FRANCO JUAN C
9958 RIDGEHAVEN AV
LAS VEGAS NV 89148-4605

470 322 17 00 4
FRED MOSS LAND INC
704 N REXFORD DR # R36
BEVERLY HILLS CA 90210

302 342 13 00 2
FRENCH ROBERT D TR
3612 SHAWNEE RD
SAN DIEGO CA 92117-5721

470 312 11 00 3
FRIEDMAN MORTON G
7211 WHITEHALL LN
WEST HILLS CA 91306

302 325 32 00 2
GARCIA FAMILY TR
PO BOX 85
VERDI NV 89439-0085

470 312 06 00 9
GARCIA SALVADOR
16865 WEGMAN DR
LA PUENTE CA 91744

470 370 02 00 1
GENTRY JOELLE C
PO BOX 2700
CALIFORNIA CITY CA 93504-0700

470 182 01 00 7
GILLILAND MARK W TR
619 BEVERLY PL
SAN MARCOS CA 92069-3745

302 341 31 00 7
GONZALES FRANK R & RUBY M
5669 TREVINO WY
BANNING CA 92220

470 151 05 00 3
GORDEN T V & PATRICIA V
P O BOX 2058
CALIF CITY CA 93505

470 311 15 00 8
GUO KYLE
726 GLEN-MADY WY
FOLSOM CA 95630-6278

302 325 08 00 3
HAHN JOHN W & HELEN J
3276 RANCHO DIEGO CI
EL CAJON CA 92019

470 302 11 00 0
HANSEN BRUCE R
PO BOX 3366
LIVERMORE CA 94551-3366

302 306 24 00 0
FRITZ RUDOLF A & LOUELLYN D
FAMILY TR
2545 GUMTREE LN
FALLBROOK CA 92028

470 302 03 00 7
GARCIA FERNANDO V
5431 BLACKWELDER ST
LOS ANGELES CA 90016-3749

302 341 16 00 4
GARECHT FAMILY TRUST
72 TURRINI CI
DANVILLE CA 94526

302 381 13 00 7
GEPHART ROSS & JUDITH M
3207 WHITNEY LN
BURBANK CA 91504-1646

302 325 30 00 6
GLOVER CARRICK GAR LIV TR
6367 MOJAVE DR
SAN JOSE CA 95120-5308

470 080 19 00 7
GONZALEZ JORGE & NANCY
4032 MARTIN LUTHER KNIG BL
LYNWOOD CA 90262

470 181 06 00 5
GRANSTROM DANIEL LEE
2602 SMOKE CANYON AV
HENDERSON NV 89074-1970

469 230 04 00 6
GUTOWICZ FAMILY TRUST
5223 TEESDALE AV
VALLEY VILLAGE CA 91607-2323

302 325 15 00 3
HAMMERSTONE REV TRUST
2323 BROADRIDGE WY
STOCKTON CA 95209-1248

469 240 28 00 9
HANZMANN ROBERTS & ANN
MARGARET
4024 N HANOVER DR
PRESCOTT VALLEY AZ 86314-2370

470 321 13 00 5
GARCIA ANTHONY L
17922 RIVER CI APT 5
CANYON COUNTRY CA 91387-3594

302 342 18 00 7
GARCIA JOSEPHINA OCHOA
1527 KIVA LN
VISTA CA 92084-3021

470 322 09 00 1
GATES LIVING TRUST
645 BLUE RIDGE DR
MARTINEZ CA 94553-5905

470 330 08 00 7
GERVACIO MARTIN & JUDITH
14900 OAKVALE RD 256
ESCONDIDO CA 92027-5614

470 152 30 00 2
GOENAGA JOE JR
1113 N AVERY DR
MOORE OK 73160

302 325 52 00 0
GONZALEZ XAVIER & SOCORRO
211 WEST 120TH ST
LOS ANGELES CA 90061

470 080 31 00 1 **DUP**
GUAY SEBASTIEN & MC MULLIN
SUZANNE
ADDRESS UNKNOWN

302 325 24 00 9
HAGENSTEIN JOHANNA J TR
2252 SUTTER VIEW LN
LINCOLN CA 95648-7718

302 341 18 00 0
HANNA ANTOINE & LINDA
1819 MONARCH RIDGE CI
EL CAJON CA 92019

302 341 32 00 0
HARDEN MELVIN L & DOROTHY L
53 EVANS ST
WATERTOWN MA 02472

470 321 07 00 8
HAROUTUNIAN BABKEN
8018 BONFIELD AV
NORTH HOLLYWOOD CA 91605

302 290 02 00 2
HARVEY RUTH L TR
P O BOX 240011
LOS ANGELES CA 90024

302 342 08 00 8
HAYES FAMILY TRUST
2101 FAIRFIELD ST
SAN DIEGO CA 92110

470 302 13 00 6
HAYES KENNETH D ET AL
1100 ILLINOIS ST
FAIRFIELD CA 94533

302 342 15 00 8
HEATH NORMAN E
3503 N BOND AV
FRESNO CA 93726-5715

302 030 15 00 4
HELASH JOHN
5670 WEST MALL
ATASCADERO CA 93422-7223

302 030 16 00 7
HELASH YVONNE
36945 CALLE ARRUZA
TEMECULA CA 92592

470 312 04 00 3
HELLER GARY & HELENE S AB
LIVING TRUST
23929 BERDON ST
WOODLAND HILLS CA 91367

302 341 37 00 5
HIBBING MARK A
PO BOX 26092
ANAHEIM CA 92825-6092

470 380 06 00 6
HIGGINS MICHAEL
2784 HOMESTEAD RD
SANTA CLARA CA 95051-5353

470 080 28 00 3
HINGELEY DAVID D
1382 RODEO DR
LA JOLLA CA 92037

302 325 26 00 5
HITCHHIKER FAMILY TRUST
1801 CROWFORD WY
PAHRUMP NV 89048

302 306 17 00 0
HOLMES ELENORA FAMILY TRUST
22878 S CANYON LAKE DR
CANYON LAKE CA 92587-7593

461 170 15 00 5
HOOD PAUL E & MARTHA O
8940 LILLIENTHAL AV
LOS ANGELES CA 90045

470 322 02 00 0
HOPKINS JAMES R
PO BOX 3230
CLEARLAKE CA 95422-3230

302 341 30 00 4
HOPKINSON ISAAC B & SANDRA E
18335 VINE ST
HESPERIA CA 92345-5532

302 303 01 00 2
HOUN SONN LAY & TAING HEANG
HOUE
1180 MIRA VALLE ST
MONTEREY PARK CA 91754-4829

302 306 20 00 8 **DUP**
HSU HAN SHUI & LIN RUTH
ADDRESS UNKNOWN

302 342 16 00 1
HUFFAKEN DAVID FORREST
21375 BEAR VALLEY RD # 3
APPLE VALLEY CA 92308-7201

470 321 04 00 9
HUTSON LAWRENCE R & MARION TR
622 MARGARITA AV
CORONADO CA 92118

302 341 14 00 8
IGLESIAS EMILY
1317 HARTLEY AV
SIMI VALLEY CA 93065-5206

302 342 01 00 7
INLAND MANAGEMENT LLC
405 MISSOURI CT
REDLANDS CA 92373

470 140 05 00 3
INVESTORS OF THE DECADE
8644 PARKRUN RD
SAN DIEGO CA 92129

470 301 20 00 9
J D LOOMIS INVS LLC
7100 LOCH LOMOND DR
BETHESDA MD 20817-4760

470 151 13 00 6
JAMES TRUST
2950 W MUIR MOUNTAIN WY
SAN BERNARDINO CA 92407-5185

302 460 19 00 1
JAN JAU SONG & TWU CHUN LAN
FMLY TR
169 S KINGSLEY ST
ANAHEIM CA 92806-4009

470 020 19 00 9
JANIEKAY L L C
15640 S 6TH PL
PHOENIX AZ 85048

302 324 01 00 5
JANWEJA AMIT
9654 BURNET AV
NORTH HILLS CA 91343-2311

469 190 32 00 6
JAWORSKI KRYSZYNA ET AL
34 GOLF VIEW DR
DOVE CANYON CA 92679-3802

302 310 16 00 8
JBL & ASSCS INC
9049 CALIFORNIA CITY BL
CALIFORNIA CITY CA 93505-2831

470 302 05 00 3
JEFFRIES RONALD & JERRIE A
2263 CALLENDER RD
ARROYO GRANDE CA 93420

302 341 26 00 3
JERDO LEWIS W
2705 WILMA ST
NATIONAL CITY CA 91950-7747

470 152 18 00 8
JOHANSING LOYDELL H & DAVID A
4450 COSUMNES VIEW TL
PLACERVILLE CA 95667-8821

470 321 05 00 2
JONES MARITAL TR
P O BOX 2700
CALIFORNIA CITY CA 93504

302 325 43 00 4
JOURNEY TR
PO BOX 1547
SPRING VALLEY CA 91979-1547

302 305 02 00 9
KAN RICHARD S
520 RUSSELL AV
MONTEREY PARK CA 91755

302 303 13 00 7
KANG RICHARD & JENNY
540 S KENMORE AV U 705
LOS ANGELES CA 90020-2591

470 030 04 00 8
KECK JACK R & SALLIE A KECK
FAMILY TRUST
41007 W 22ND ST
PALMDALE CA 93551-2314

302 341 15 00 1
KELLER BARBARA J
4220 MEADOW WOOD CT
EL DORADO HILLS CA 95762-7529

470 322 27 00 3
KELLY ROSE
PO BOX 46782
LAS VEGAS NV 89114-6782

470 181 04 00 9
KENSAY INTERNATIONAL CORP
2625 E FIRST ST
LOS ANGELES CA 90033

469 170 10 00 6
KEREN & ASSCS LLC
P O BOX 2016
BEVERLY HILLS CA 90213

469 170 18 00 0
KEREN & ASSOC LLC
P O BOX 2016
BEVERLY HILLS CA 90213

DUP

302 306 18 00 3
KERN COUNTY GROUP LLC
ADDRESS UNKNOWN

DUP

302 341 27 00 6
KERNICK VICTOR J
P O BOX 2113
BUCKLY WA 98321-2113

302 330 34 00 6
KHALILI ROHI
6562 BIANCA AV
VAN NUYS CA 91406-5337

470 350 06 00 7
KHATIBI RICHARD
P O BOX 16296
ENCINO CA 91416

302 342 03 00 3
KHIEU SINARA
20019 THORNLAKE AV
CERRITOS CA 90703

302 271 40 00 3
KINOSHITA KAZUO
7135 FIRMAMENT AV U 18
VAN NUYS CA 91406

470 322 07 00 5
KINOSHITA STANLEY H REVOCABLE
TRUST
3180 EL SOBRANTE ST
SANTA CLARA CA 95051-3720

470 321 06 00 5
KIRNON & WATERN TRUST
2179 N RIVERSIDE AV
RIALTO CA 92377-4007

470 360 06 00 0
KIRTLEY JOHN R
4029 CHESTNUT AV
CONCORD CA 94519-1910

470 152 12 00 0
KLEIS ARTHUR F & BERTHA M
414 W MAIN ST
ST CHARLES IA 50240

302 325 46 00 3
KLIPPNESS KELLY & JACQUELINE S
3340 SANDSTONE CT
PALMDALE CA 93551-1057

302 341 19 00 3
KOCH HARRY G & FLORDELIZA O TR
14821 OAKLINE RD
POWAY CA 92064-2995

470 322 12 00 9
KOONCE QUINTON L & CARRIE L
601 ALDERSON ST
EL CAJON CA 92019

302 341 38 00 8
KRAUS OTTO & MARY D
998 KENNARD WY
SUNNYVALE CA 94087

302 303 15 00 3
LA MONICA TRUST
28145 CALLE CASAL
MISSION VIEJO CA 92692-1745

302 341 36 00 2
LAMEE DONALD M
710 MCLEOD ST
LIVERMORE CA 94550-4766

470 010 12 00 5
LAMPRECHT LIV TRUST
42075 CALLE CORRIENTE
MURRIETA CA 92562-9121

302 460 17 00 5
LANTING CARLOS S & MARGARET R
5200 E EL CEDRAL ST
LONG BEACH CA 90815-3904

470 301 25 00 4
LAWSON NORMAN CARL LIV TR
P O BOX 1016
HEMET CA 92546

302 290 30 00 3
LAZARIS FMLY TR
38370 SHOAL CREEK DR
MURRIETA CA 92562

302 360 33 00 2
LEE DAVIS S & SUSAN
631 CAMINO VERDE
S PASADENA CA 91030

302 290 12 00 1
LEE KAM P & RENA ET AL
853 E VALLEY BL # 103
SAN GABRIEL CA 91776

302 341 25 00 0
LEONARD MICHAEL J
1378 PINE AV
SAN JOSE CA 95125-3970

302 460 06 00 3
LEVID DARNELO
4635 PALMERO DR
LOS ANGELES CA 90065

302 470 08 00 2
LEVITT FAMILY TRUST
23633 ARMINTA ST
WEST HILLS CA 91304

302 460 07 00 6
LIN OLIER CHIA HUA
1978 N GREENGROVE ST
ORANGE CA 92865-4621

302 325 42 00 1
LOHRBACH RONALD P & MARY
GUSSICK LIVING TR
10914 NEW SALEM CI
SAN DIEGO CA 92126

470 322 08 00 8
LOMBARD KEVIN & DIANE FAMILY
TRUST
3648 DRIFTWOOD ST
CHINO HILLS CA 91709

470 322 25 00 7
LONGSHORE JEFFREY WAYNE
19250 PINTO WY
APPLE VALLEY CA 92308-6719

470 090 12 00 9
LOO WAH & KOUI MOE
ADDRESS UNKNOWN

DUP

302 480 18 00 4
LOPEZ MARIA
13373 ANOLA ST
WHITTIER CA 90605-2806

470 090 03 00 3
LU TRINA
4016 LANDUA CT
RIVERSIDE CA 92501

469 190 23 00 0
LUGO JESS & ROSSANA
12332 WHITLEY ST
WHITTIER CA 90601-2725

302 480 01 00 4
LY VENG TIENG ET AL
3555 LOCUST AV
LONG BEACH CA 90807

470 322 35 00 6
MACRIS GEORGE FAMILY TRUST
974 WOODLAND DR
TURLOCK CA 95382-7281

470 080 29 00 6
MAGES FAMILY TRUST
10416 WILMINGTON LN BOX 15
APPLE VALLEY CA 92308

470 080 18 00 4
MAI TIMOTHY THANH & LAM MY
HONG
2157 S SPINNAKER ST
ANAHEIM CA 92802

470 181 08 00 1
MALDONADO LIONEL & YOLANDA
23612 MARIN WY
LAGUNA NIGEL CA 92677

470 090 04 00 6
MAMAYAN GEVORK
PO BOX 2387
CALIFORNIA CITY CA 93504-0387

302 290 29 00 1
MARITAL TRUST
513 EUCLID ST
SANTA MONICA CA 90402-2921

302 290 19 00 2
MARTINEZ ALEJANDRO MIGUEL
12421 VENICE BL STE 2
LOS ANGELES CA 90066-3827

470 302 12 00 3
MARTINEZ ROGELIO
5255 W JEFFERSON BL
LOS ANGELES CA 90016-3841

469 230 01 00 7
MAZIN FAMILY TR
12329 HARTSOOK ST
VALLEY VILLAGE CA 91607-3052

470 151 09 00 5
MAZIN FAMILY TRUST
12329 HARTSOOK ST
VALLEY VILLAGE CA 91607-3052

DUP

302 341 34 00 6
MC BRIDE THOMAS E III & CAROLYN
2021 QUEEN VICTORIA CT
LAWRENCEVILLE GA 30043

302 341 42 00 9
MC EVOY MARK P & GARIAN R
15072 SNOWHILL ST
FRISCO TX 75035

302 325 38 00 0
MEARA JOSEPH L JR & NICOLETTE H
18180 STEEPLECHASE DR
PEYTON CO 80831-9303

470 330 11 00 5
MELGOZA AURELIO
2212 WHITE OAK AV
WHITING IN 46394

469 170 16 00 4
MERCADO NAVIDAD MENJIVAR &
AYON JUAN MERCADO
15980 GRAND AV SP M14
LAKE ELSINORE CA 92530-5649

470 152 20 00 3
MERKIN ELLIOTT & ELIZABETH
833 W 10TH ST
CLAREMONT CA 91711

470 330 03 00 2
MEUNIER STEVEN
22347 CABALLERO RD
CLOVIS CA 93611-9621

470 151 01 00 1
MILLER MELINDA J
55 N MAIN ST STE 206
LOGAN UT 84321-4584

302 330 17 00 7
MIRZAYAN ARA FAMILY TRUST
1342 DOVERWOOD DR
GLENDALE CA 91207-1147

470 152 19 00 1
MITCHELL LORI LYNN
37233 SERPENTINE LN
BURNEY CA 96013-4244

302 325 39 00 3
MOORE INVESTMENT TRUST
1140 EDMONT RD
EMMETT ID 83617

470 080 32 00 4
MOORE JOHN T & DONNA L FMLY TR
52 VIA LARGA VISTA
BONSALL CA 92003

470 152 02 00 1
MORRIONE MICHAEL
712 WHITE OAK
RIDGECREST CA 93555

470 152 04 00 7
MORRIONE MICHAEL
27304 BALBOA CT
HEMET CA 92544

470 152 03 00 4
MORRIONE PHIL & DEBORAH
5737 FLORENCE AV
SOUTHGATE CA 90280

470 322 29 00 9
MORRISON JAN
2800 NEILSON WY STE 709
SANTA MONICA CA 90405

302 325 10 00 8
MULQUEEN MICHAEL O HEHIR
1314 GATES HEAD DR
BEL AIR MD 21014-2204

470 322 23 00 1
MUNIZ RONALD E & NANCY P
7037 PEMBROKE WY
ROCKLIN CA 95677-4528

302 325 09 00 6
MUSUNURU VAMSI
PO BOX 1000
SAN JOSE CA 95108-1000

302 342 07 00 5
MYERS WILLIAM F
5707 E 32ND ST # 972
YUMA AZ 85365

470 151 04 00 0
NAZARIAN JOHN V & MARY H
27871 ENCANTO
MISSION VIEJO CA 92692

470 360 05 00 7
NELSON ERIKA LIVING TRUST
7 DE LINO
RANCHO SANTA MA CA 92688-1635

470 302 29 00 3
NEVIS FRANK C
108 E WYNOT DR
NINE MILE FALLS WA 99026-9313

470 302 04 00 0
NEVIS PEGGY A
108 E WYNOT DR
NINE MILE FALLS WA 99026-9313

302 480 09 00 8
NEWMAN ILA MAE LIVING TRUST
11145 MORENA AV
LAKESIDE CA 92040

(Space intentionally left blank)

302 325 50 00 4
NINH PHUNG KIEN
PO BOX 40033
STUDIO CITY CA 91614-4033

470 322 28 00 6
NISBET ALISON LEIGH
1977 HIGGINS LN
EL CENTRO CA 92243

470 322 05 00 9
NORTON GEORGE F
1166 MADISON AV # 129
LOVELAND CO 80537

302 271 42 00 9
NOZOMI INVESTMENTS INC
2625 E FIRST ST
LOS ANGELES CA 90033

470 152 22 00 9
NUESCH CHRISTIAN & MICHELE
26523 CARDINAL DR
SANTA CLARITA CA 91387-6318

302 325 25 00 2
O BRIEN SUSAN
3921 SUNSET LN
OXNARD CA 93035-3948

470 090 06 00 2
O DONNELL GERARD
ADDRESS UNKNOWN

DUP

302 330 33 00 3
O LAUGHLIN RANDALL & JEANIE M
9650 DENHART AV
CALIFORNIA CITY CA 93505-6200

469 170 23 00 4
OAK INVS LLC
P O BOX 2016
BEVERLY HILLS CA 90213

302 290 04 00 8
OCZKOWSKI EDWARD T
660 EUCLID AV
EL CENTRO CA 92243

469 170 09 00 4
OJENA ARTHUR B & BETH Z
10771 RICHALAND AV
LOS ANGELES CA 90064

302 470 07 00 9
OLIVEIRA FAMILY TRUST
9005 FIELDING CT
BAKERSFIELD CA 93307-5962

302 020 08 00 1
ORTON DAVID M & PATRICIA D
FAMILY TRUST
1 ISLANDVIEW
IRVINE CA 92604-3601

302 020 17 00 7 **DUP**
ORTON FAMILY TR
1 ISLANDVIEW
IRVINE CA 92604-3601

302 321 01 00 4
ORTON JAMES L
1265 MONTEREY AV
BERKELEY CA 94707-2718

470 330 05 00 8
PADUMANE RAVIPRAKASH R &
SANDHYA R
305 S PHILO DR
LAFAYETTE LA 70506

302 020 21 00 8
PALMER M STACEY
615 E HOLLY AV # 202
EL SEGUNDO CA 90245-4039

302 020 19 00 3
PALMER M STACEY PROFIT
SHARING PLAN & TR
615 E HOLLY AV # 202
EL SEGUNDO CA 90245-4039

302 342 17 00 4
PAPLHAM CLAYTON MICHAEL
P O BOX 10574
COSTA MESA CA 92627

470 322 19 00 0
PAPLHAM ERNEST CLAYTON
P O BOX 812
NEWPORT BEACH CA 92661-0812

470 322 21 00 5
PAPLHAM KENNETH JOSEPH
831 LANGHOLM WY
RIVERSIDE CA 92508

470 322 20 00 2
PAPLHAM TRUST
2474 SHADY OAK DR
GREEN BAY WI 54304-1644

469 170 04 00 9
PATEL MUKESHBHAI V & NISHA A
109 TOWERING BEECH CT
SANDY SPRING MD 20860-1072

302 290 03 00 5
PEACE JUDY ET AL
116 WATERFORD CI
RANCHO MIRAGE CA 92270

302 325 35 00 1
PENDRAY EDWARD G & CLAIRE A
FAMILY TR
2700 TRIMMIER RD APT 6105
KILLEEN TX 76542-6045

470 152 14 00 6
PERRY JAMES F & BETTY L JOINT
TRUST
1118 ICHABOD CT
NIXA MO 65714-7407

302 271 01 00 0
PHAM KHANH
2254 LEVIN ST
MILPITAS CA 95035-2654

470 152 15 00 9
PHELPS JOHN & SHIRLEY
2460 W ROBY AV
PORTERVILLE CA 93257-7718

470 322 40 00 0
PIERCE DELORES A
5201 RUFFIN RD STE A
SAN DIEGO CA 92123-1699

470 090 32 00 7
PINETREE ENTERPRISE INC
PO BOX 16665
IRVINE CA 92623-6665

302 271 39 00 1
PLATINUM DYNAMICS
9844 HELENA AV
MONTCLAIR CA 91763-2723

470 330 06 00 1
POTTER ROSEMARY
2790 BRAWLEY RD
PINON HILLS CA 92372-9786

470 151 02 00 4
POWERS RICHARD J & SANDRA JEAN
6780 KENYON AV
HESPERIA CA 92345

302 342 23 00 1
PUJOL EMILIO
11128 DEBBY ST
NORTH HOLLYWOOD CA 91606-3710

470 140 09 00 5
RAISZADEH ALI & LYNN
2875 BRIARHAVEN LN
CORONA CA 91720

302 342 21 00 5
RANDALL GRACE DACONG TR
4855 SAN FELIPE RD U 309
SAN JOSE CA 95135-1296

470 312 05 00 6
RANGEL GILBERTO
18548 FIDALGO ST
ROWLAND HGTS CA 91748

470 312 03 00 0
RAPALO LUIZ JR
7713 COLUMBINE AV
CALIFORNIA CITY CA 93505

470 152 27 00 4
RAPOLE MADHUSUDHAN RAO
2017 SE 240TH AV
SAMMAMISH WA 98075-8171

302 342 25 00 7
REINELT FAMILY TRUST
2701 FORRESTER DR
LOS ANGELES CA 90064

470 322 16 00 1
REISMAN TRUST FUND A 1
603 N CAMDEN DR
BEVERLY HILLS CA 90210-3203

470 370 03 00 4
REITZ KEIKO JEAN
PO BOX 21782
BROOKLYN NY 11202-1782

302 325 51 00 7
REYES JUAN
2075 W 250TH ST
LOMITA CA 90717

302 330 38 00 8
REYES THOR-ALCYONE L & TITA C
13918 BEAL FENCE CT
MOORPARK CA 93021-5022

302 480 13 00 9
RICHARD ADOLPH DAVIS INC
P O BOX 935
RANCHO MIRAGE CA 92270

461 220 24 00 5
RIEGER CHRISTOPHER T & GLENDA
O REVOCABLE TR
8142 VENTURA CANYON AV
PANORAMA CITY CA 91402-6141

470 100 08 00 0
RIORDAN B J & TUTTLE D W
27275 DELEMOS
MISSION VIEJO CA 92692

470 380 02 00 4
RIVERA FAMILY TR ET AL
339 AVENIDA MARGARITA
ANAHEIM CA 92807

469 170 01 00 0
RIVERA FAMILY TRUST
2889 EASTVIEW TR
ESCONDIDO CA 92025-7774

470 380 04 00 0
ROBERTO FAMILY TR ET AL
675 HIGLEY WY
OCEANSIDE CA 92057-5050

302 290 21 00 7
ROBERTS STEVEN & DANIEL ET AL
44345 SUNDELL AV
LANCASTER CA 93536

302 030 05 00 5
ROBERTSON CARL W JR
6332 HUNGERFORD ST
LAKEWOOD CA 90713-1259

302 341 33 00 3
ROBILLIARD LIVING TR
1823 61ST AV
GIG HARBOR WA 98335-7565

302 325 23 00 6
ROBL GUENTER H & FLORENCE TRS
P O BOX 2096
PORTERVILLE CA 93258

302 306 16 00 7
ROBLES GILBERTO
5938 N DEL LOMA AV
SAN GABRIEL CA 91775-2514

469 240 27 00 6
ROBLETO OLGA
4037 PHELAN RD # 124
PHELAN CA 92371-8915

469 240 21 00 8
ROCHE JOHN J & ELAINE A TRUST
727 3RD AV
CHULA VISTA CA 91910-5888

470 322 10 00 3
ROPER JERALD DEAN TR
3679 CAMEO LN
SAN DIEGO CA 92111-4044

302 460 05 00 0
ROSS EMERITA F C
3259 ALBRET ST
LANCASTER CA 93536-8388

470 110 06 00 7
ROTHSCHILD RAYMOND ET AL
536 E THOMPSON BL # 9
VENTURA CA 93001-2841

302 325 18 00 2
ROY RICHARD & MARY FAMILY
TRUST
3208 WHEAT ST
SAN DIEGO CA 92117-4430

302 306 26 00 6
SABELINO AGUSTIN C & IRENE D
15171 YORKSHIRE LN
HUNTINGTN BCH CA 92647

470 090 01 00 7
SAIDI GHOLAM R & MEIMAN L
735 PLATEAU AV
MONTEREY PARK CA 91755

470 151 06 00 6
SALERNO MARY M
11615 W CROSS SLOPE WY
NAMPA ID 83686-5674

470 151 11 00 0
SALERNO MARY MARTHA
11615 W CROSS SLOPE WY
NAMPA ID 83686-5674

302 290 28 00 8
SAN FILIPPO VINCE & GRACE IRREV
TR
220 W PASEO DE CRISTOBAL
SAN CLEMENTE CA 92672-5433

470 302 27 00 7
SANCHEZ OCTAVIANO T & MEDINA
BEATRIZ
21124 74TH ST
CALIFORNIA CITY CA 93505-4900

302 381 01 00 2
SANH SE HEN & TAING HENG ZY ET
AL
5401 CHATSWORTH LN
KELLER TX 76244

302 324 03 00 1
SARKISIAN ALAN H
3439 W 172ND ST
TORRANCE CA 90504

302 324 02 00 8
SARKISIAN ALAN H LIV TR
16704 FALDA AV
TORRANCE CA 90504-1736

470 151 14 00 9
SATTERFIELD LARRY & DIANA
FAMILY TR
13701 ALDERWOOD LN APT 29L
SEAL BEACH CA 90740-3928

470 140 01 00 1
SAVITCH CHARLES S DECEDENTS
TRUST
PO BOX 260588
ENCINO CA 91426-0588

470 322 26 00 0
SCHURKE JASON & LIDIA
1400 COLONY DR
KEARNEY MO 64060-8404

470 020 06 00 1
SEIZED PROPERTY
15918 EL CENTRO
HESPERIA CA 92345

470 322 11 00 6
SELLENS MERL EST & F H
3921 LAGUNA BLANCA DR
SANTA BARBARA CA 93110

470 330 13 00 1
SEPEHR ALI
18175 KAREN DR
TARZANA CA 91356

216 010 29 00 1
SEYMOUR ENTERPRISES
P O BOX 6998
BEVERLY HILLS CA 90212

470 330 12 00 8
SHIN FAMILY TRUST
3511 HOLBORO DR
LOS ANGELES CA 90027-1429

302 342 04 00 6
SIDEBOTHAM JAMES & CAROLE TR
32952 TESORO ST
DANA POINT CA 92629

470 152 17 00 5
SIEGELMAN ETHEL M
240 MOSS ST APT 6
LAGUNA BEACH CA 92651-3655

302 303 09 00 6
SIPING BONIFACIO P & SATURNINA
12911 RUBENS AV
LOS ANGELES CA 90066

470 090 14 00 5 **DUP**
SIU ADOLPHE
ADDRESS UNKNOWN

470 090 15 00 8
SIU ALEXIS
2737 ROSEDALE AV
SOQUEL CA 95073-2636

302 342 24 00 4
SKRODINSKY ANDREW L
336 BROWNING RD
VOLGA WV 26238-7422

470 380 05 00 3
SMITH ALVA & BETTY REV LIV TR
9412 GORDON AV
LA HABRA CA 90631-2459

302 020 10 02 4
SMITH JOANNE W
117 TUJUNGA AV
OXNARD CA 93035

470 030 36 00 1
SOBALVARRO FRANCISCO L &
DOLORES T
833 GRETTA AV
COVINA CA 91790

470 302 22 00 2
SOGAWA STANLEY T & LINDA K
TRUST
849 EBBETTS DR
CAMPBELL CA 95008-5109

469 170 17 00 7
SOLIS JOSE A & HILDA
1215 SUGARBUSH DR
VISTA CA 92084-7463

302 305 09 00 0
SOO-HOO BALDWIN B H & YVONNE
P O BOX 1020
MONTEREY PARK CA 91754

302 341 40 00 3
SORICK ZORA ELLEN LVG TRUST
3295 FAWN DR
SAN JOSE CA 95124-2206

302 322 07 00 9
SPEIGHT ALLISON
6239 DAMASK AV
LOS ANGELES CA 90056-1732

302 290 22 00 0
SPENGLER KLAUS & MUNEK
10639 ROSELLE ST
SAN DIEGO CA 92121-1539

470 321 16 00 4
STADELMANN GEORGE A TR
12017 HILLHURST CI
GROVELAND CA 95321-9549

302 330 37 00 5
STALKNEGT FAMILY TRUST
14916 BURIN AV
LAWNDALE CA 90260

302 010 04 00 6
STATE OF CALIFORNIA
1416 NINTH ST FLR 12
SACRAMENTO CA 95814

302 470 19 00 4
STELLO JOSEPH TRUST
P O BOX 1868
LANCASTER CA 93539-1868

469 030 01 00 9
STELLO KATRINA M TR
P O BOX 1868
LANCASTER CA 93539

302 290 23 00 3
STERLING MARJORIE H TRUST
13267 MONTAGUE ST
ARLETA CA 91331-4724

469 170 05 00 2
STERNFELD JACK & EVELYN
3902 PEACOCK RIDGE RD
AGOURA HILLS CA 91301-5362

302 325 49 00 2
STILLIENS MARVIN E & CAROLYN M
2504 ELLEN LN
SANTA MARIA CA 93455-7417

461 220 27 00 4
SWANSON MAJA S
P O BOX 6205
WOODLAND HLS CA 91365

302 460 02 00 1
TABORA ANTONIO M SEPARATE
PROP TRUST
2379 NALIN DR
LOS ANGELES CA 90077-1806

470 301 23 00 8
TAKAYAMA TOMOKATSU ET AL
23232 82ND PL W
EDMONDS WA 98026

470 301 24 00 1
TAKAYAMA TOMOKATSU ET AL
23232 W 82ND PL
EDMONDS WA 98026-8720

470 302 19 00 4
TERADA SHIRLEY M TR
1580 VIREO AV
SUNNYVALE CA 94087-5021

469 170 03 00 6
THELLEND FAMILY TRUST
26520 ATHENA AV
HARBOR CITY CA 90710

302 325 01 00 2
THIELE GARY F
77 SUNSET LN U 234
RIDGEFIELD CT 06877-4694

302 303 14 00 0
TIERNAN JOSEPH W
5817 OAKBROOK ST
LONG BEACH CA 90815

302 325 02 00 5
TINDALL FAMILY TR
6069 ALLANS WY
COULTERVILLE CA 95311

302 325 33 00 5
TREVINO MARIA L
324 MEDFORD HEIGHTS LN
MEDFORD OR 97504-7550

470 360 02 00 8
TRIPLE E DEV CORP
5560 S FORT APACHE RD STE 100
LAS VEGAS NV 89148-7699

470 090 13 00 2 **DUP**
TUMAHAI RONALD & GOODING
ELINA
ADDRESS UNKNOWN

302 341 05 00 2
TWOHIG SKYLER
2731 FREMONT LN
COSTA MESA CA 92626-5607

302 325 41 00 8
UCHIDA HARRY W & AMY E TR
1904 ARMACOST ST
W LOS ANGELES CA 90025

302 360 42 00 8
UNION PACIFIC R/R CO
1400 DOUGLAS ST # 1610
OMAHA NE 68179-1610

470 130 14 00 6
UPWARD LOOK INVS
PO BOX 2432
CALIFORNIA CITY CA 93504-0432

302 360 01 00 9
UYETAKE JOE SENICHI & KAZUKO
12304 SANTA MONICA BL STE 305
LOS ANGELES CA 90025

302 325 54 00 6
VALDEZ STANLEY & TERESA L
893 BUENA VISTA WY
CHULA VISTA CA 91910

302 460 18 00 8
VALLEE GUY L & MARLA L
PO BOX 5571
PAHRUMP NV 89041-5571

302 306 25 00 3
VAN DER HEIDE HENDRIK & C G
3431 KENTWATER DR
BUFORD GA 30519-7713

302 290 01 00 9
VARTANIAN TINA V TR
PO BOX 4584
VALLEY VILLAGE CA 91617

302 325 47 00 6
VASQUEZ PEDRO A & RUTH M REV
LIVING TRUST
11859 MOUNT CAMBRIDGE CT
RANCHO CUCAMONG CA 91737-7917

302 341 17 00 7
VERNON FAMILY TRUST
35 GRAND MIRAMAR DR
HENDERSON NV 89011-2203

470 322 36 00 9
VON EITZEN WOLFGANG TRUST
501 VIA CASITAS
GREENBRAE CA 94904-1901

302 470 11 00 0
VON WATTENVILLE KARINA
PO BOX 1503
LOS ANGELES CA 90078-1503

470 380 03 00 7
VUONG HUNG
8524 SHARP AV
SUN VALLEY CA 91352

470 152 09 00 2 WAER RICHARD DEAN EST 12 DRAKE AV RYE NY 10580-1309	302 305 15 00 7 WANG NATHAN & LYNDA S 12523 NEON WY GRANADA HILLS CA 91344-1342	302 341 21 00 8 WARD CHARLES M & ETHELLEA 828 ROCK LEDGE RD HEBER SPRINGS AR 72543-7990
461 220 20 00 3 WEISSMAN RICHARD RECEIVER 12121 WILSHIRE BL STE 600 LOS ANGELES CA 90025	302 342 06 00 2 WENZEL LIVING TR 764 CHERRY HILLS LN RIO VISTA CA 94571	470 350 08 00 3 WEST PALM DEV CO 1875 E CENTURY PK STE 2230 LOS ANGELES CA 90067-2522
302 290 17 00 6 WESTERN PACIFIC ENTERPRISES INC ADDRESS UNKNOWN	DUP	302 303 03 00 8 WHITELOCK LORETTA ET AL 13442 PEPPERDINE CI WESTMINSTER CA 92683
470 322 24 00 4 WILD FAMILY TRUST 1314 CORTE DE LOS VECINOS WALNUT CREEK CA 94598-2902	302 325 48 00 9 WILLIAMS JODI 1217 SAN JUAN AV SAN JOSE CA 95110-1441	470 350 02 00 5 WILLIAMS VIRGINIA 2926 MILLSBRAE AV OAKLAND CA 94605-1102
470 020 13 00 1 WILLIAMSON LIVING TRUST P O BOX 2613 CALIFORNIA CITY CA 93504	470 130 16 00 2 WILLIS STEPHEN & MARY 2008 TR 32925 VISTA DE ORO TEMECULA CA 92591	470 301 22 00 5 WOLFE GLENDA P O BOX 2016 BEVERLY HILLS CA 90213
470 080 16 00 8 WOLFE JEFFREY 206 S STANLEY DR BEVERLY HILLS CA 90211-3005	470 152 16 00 2 WOLPERT FAMILY TRUST 835 COLDSTREAM DR EL CAJON CA 92020-7719	302 341 22 00 1 WOMACK JAMES O 233 TALISMAN DR APT 2 PAGOSA SPGS CO 81147-8202
470 360 04 00 4 WONG ERNEST TRUST 4110 NE 118TH AV KIRKLAND WA 98033-8745	470 322 30 00 1 WRAY ROBERT W JR & LORRAINE R 1450 SW DELOS AV PORT SAINT LUCI FL 34953-6138	470 330 10 00 2 WU HELEN 115 MAPLE AV MORRISTOWN NJ 07960
470 330 15 00 7 YABLONSKI FAMILY TRUST A 35859 BLACK MARLIN DR LEWES DE 19958-5036	470 370 04 00 7 YEE DANIEL 1080 BUSH # 600 SAN FRANCISCO CA 94109	302 305 07 00 4 YONG AMOS W ADDRESS UNKNOWN
302 305 01 00 6 YONG AMOS W - BEATRICE - FONG 1373 SUNNYSLOPE DR MONTEREY PARK CA 91754-4503	302 381 04 00 1 YOON BYUNG YUL 4124 TRACY ST LOS ANGELES CA 90027	470 350 01 00 2 YOUNT LIV TR 1075 CAMINO RICARDO SAN JOSE CA 95125-4306
470 140 08 00 2 ZABEL MARILYN O LIV TR 2514 FERNWOOD DR VIENNA VA 22181-4019	469 170 11 00 9 ZAVALA HERMENEGILDO 8001 FOREST BL CALIFORNIA CITY CA 93505-4323	470 322 37 00 2 ZHANG XIANZHI ADDRESS UNKNOWN

DUP

DUP

302 290 27 00 5
ZONOS FAMILY PROP LLC
223 VIA MALAGA
SAN CLEMENTE CA 92673-6702

461 220 30 00 2
ZSIGMOND FAMILY TRUST
150 LOMBARD ST STE 301
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PLACENTIA CA 92870-4933

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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 # 2020099017

Project Title: Kudu Solar Farm by 69SV 8ME LLC

Lead Agency: Kern County Planning and Natural Resources Department

Contact Person: Mark Tolentino

Mailing Address: 2700 "M" Street Suite 100

Phone: (661) 862-5041

City: Bakersfield

Zip: 93301

County: Kern

Project Location: County: Kern

City/Nearest Community: City of California City

Cross Streets: bisected E/W by Washburn Blvd. and N/S by Neuralia Road; 1-mile west of State Route 14 Zip Code: 93501

Lat. / Long.: 35°10'41.39" N / 118° 00'37.92" W

Total Acres: approx. 1,955

Assessor's Parcel No.: Multiple

Section: Multiple

Twp.: 31S, 32S

Range: 37E

Base: MDB&M

Within 2 Miles: State Hwy #: SR 14

Waterways: Cache Creek

Airports: California City Airport

Railways: Union Pacific

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 _____

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 PV MW 500
 Waste Treatment: Type _____ MGD _____
 Hazardous Waste: Type _____
 Other: Battery Energy Storage up to 600 MWh

Project Issues Discussed in Document:

Aesthetic/Visual
 Agricultural Land
 Air Quality
 Archeological/Historical
 Biological Resources
 Coastal Zone
 Drainage/Absorption
 Economic/Jobs
 Other GHG, Wildfire, Tribal Cultural Resources, Energy

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

Present Land Use/Zoning/General Plan Designation:

Undeveloped Land/*Kern County General Plan*: 5.6 (Min. 2.5 Gross Acres/Unit (Fremont Interim Rural Community Plan), 8.5 (8.5 - Resource Management, Min. 20 Acre Parcel Size). *Kern County Zoning*: A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining). *California City General Plan*: O/RA - Controlled Development, Public Parks & Recreation or Public Schools. *California City Zoning*: O/RA (Open Space/Residential/Agricultural).

Project Description:

The Kudu Solar Farm Project by 69SV 8ME LLC (project proponent), is a proposed photovoltaic solar facility and energy storage system capable of producing up to 500 MW of alternating current power and 600 MW hours of storage capacity on approximately 1,955.13 acres of privately-owned land. The proposed project would be supported by a 230-kV gen-tie

overhead and/or underground generation tie-line (gen-tie) from originating from the Eland substation and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation located approximately two miles to the northwest of the project site, or through an upgraded connection through Eland 1. The proposed project intends to share the Eland 1 Solar Project's gen-tie line and right of way, which will be accomplished by constructing the line conductor capable of supporting both projects. Construction of the gen-tie and substation will be done as part of the Eland 1 Solar Project, consistent with the conditions of approval outlined in that project's CUP(s). If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the Eland 1 Solar Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029). The proposed project's permanent facilities would include solar arrays and inverters, service roads, a power collection system, communication cables, overhead and underground electrical switchyards, project substations, energy storage system(s), and operations and maintenance (O&M) facilities.

Implementation of the project as proposed would require: *Kern County*: a) ZCC 14, Map #152; b) CUP 28, Map #152; and c) GPA 10, Map #152 (Circulation). *California City*: a) CUP 19-04

Reviewing Agencies Checklist

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

- | | |
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| <input type="checkbox"/> Boating & Waterways, Department of | <input type="checkbox"/> Office of Historic Preservation |
| <input checked="" type="checkbox"/> California Highway Patrol | <input type="checkbox"/> Office of Public School Construction |
| <input type="checkbox"/> CalFire | <input checked="" type="checkbox"/> Parks & Recreation |
| <input checked="" type="checkbox"/> Caltrans District # <u>6 & 9</u> | <input type="checkbox"/> Pesticide Regulation, Department of |
| <input checked="" type="checkbox"/> Caltrans Division of Aeronautics | <input checked="" type="checkbox"/> Public Utilities Commission |
| <input type="checkbox"/> Caltrans Planning (Headquarters) | <input checked="" type="checkbox"/> Regional WQCB # <u>Lahontan</u> |
| <input type="checkbox"/> Central Valley Flood Protection Board | <input type="checkbox"/> Resources Agency |
| <input type="checkbox"/> Coachella Valley Mountains Conservancy | <input type="checkbox"/> S.F. Bay Conservation & Development Commission |
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| <input type="checkbox"/> Colorado River Board | <input type="checkbox"/> San Joaquin River Conservancy |
| <input checked="" type="checkbox"/> Conservation, Department of | <input type="checkbox"/> Santa Monica Mountains Conservancy |
| <input type="checkbox"/> Corrections, Department of | <input checked="" type="checkbox"/> State Lands Commission |
| <input type="checkbox"/> Delta Protection Commission | <input type="checkbox"/> SWRCB: Clean Water Grants |
| <input type="checkbox"/> Education, Department of | <input type="checkbox"/> SWRCB: Water Quality |
| <input checked="" type="checkbox"/> Energy Commission | <input type="checkbox"/> SWRCB: Water Rights |
| <input checked="" type="checkbox"/> Fish & Game Region # <u>Fresno</u> | <input type="checkbox"/> Tahoe Regional Planning Agency |
| <input checked="" type="checkbox"/> Food & Agriculture, Department of | <input checked="" type="checkbox"/> Toxic Substances Control, Department of |
| <input type="checkbox"/> General Services, Department of | <input checked="" type="checkbox"/> Water Resources, Department of |
| <input type="checkbox"/> Health Services, Department of | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Housing & Community Development | <input type="checkbox"/> Other _____ |
| <input checked="" type="checkbox"/> Integrated Waste Management Board | |
| <input checked="" type="checkbox"/> Native American Heritage Commission | |

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

Starting Date November 19, 2021 Ending Date January 3, 2022

Lead Agency (Complete if applicable):

Consulting Firm: <u>Michael Baker International</u>	Applicant: <u>69SV 8ME LLC c/o 8minute Solar Energy</u>
Address: <u>3760 Kilroy Airport Way, Suite 270</u>	Address: <u>250 Sutter Street, Suite 600</u>
City/State/Zip: <u>Long Beach, CA 90806</u>	City/State/Zip: <u>San Francisco, CA 94108</u>
Contact: <u>Nicole Marotz, Project Manager</u>	Phone: <u>(415) 818-5103</u>
Phone: <u>(858) 614-5000</u>	

Signature of Lead Agency Representative: _____ **Date:** 11/19/2021

Mark Tolentino, Planner II

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

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Draft

Environmental Impact Report

SCH #2020099017

Volume 1
Chapters 1 through 10

KUDU SOLAR PROJECT
by 69SV 8ME LLC (8Minute Energy) (PP20405)

Zone Change Case No. 14, Map No. 152;
Conditional Use Permit No. 28, Map No. 152;
General Plan Amendment No. 10, Map No. 152 (Circulation);
Non-Summary Vacations of Public Access Easements



Kern County
Planning and Natural Resources Department

Technical Assistance by:
Michael Baker International

November 2021

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1.1 Introduction

The Kudu Solar Project (proposed project), proposed by 69SV 8ME LLC (8Minute Energy/project proponent/operator), would develop a photovoltaic solar facility and energy storage system along with associated infrastructure necessary to generate up to 500 megawatts (MW) of alternating current (AC) power and up to 600 MW-hour (MWh) of energy storage capacity. The proposed project consists of approximately 1,955.13 acres of privately-owned land, as identified in Table 1-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage*, below, identifies the Assessor Parcel Numbers (APNs) for the project site.

The proposed project would be supported by a 230 kilovolt (kV) overhead and/or underground generation-tie (gen-tie) line(s) originating from one or more on-site substation(s) and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. The proposed project intends to share the previously approved Eland 1 Solar Facility's (Eland 1) gen-tie line and right-of-way (ROW), which may require stringing additional conductor on the Eland 1's transmission structures, or increasing the capacity of Eland 1's gen-tie by reconductoring the line with thicker cable. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the approved Eland 1 Solar Project Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029).

The project proponent/operator is requesting the following (acreages are approximate):

Kern County:

- Zone Change Case No. 14, Map No. 152:
 - From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 164.76 acres;
 - From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and
 - From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
- Issuance of Conditional Use Permit No. 28, Map No. 152
 - To allow for the construction and operation within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of AC power and 600 MWh of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance.
- General Plan Amendment No. 10, Map No. 152

- Amendment to the Circulation Element of the Kern County General Plan to remove road reservations on section and mid-section lines within the Kern County project boundaries.
- Non-Summary Vacation, Map No. 152, to remove public access easements within the project boundaries.

California City (Responsible Agency):

- The City of California City is a Responsible Agency under CEQA. For the parcels within the City of California City limits, the City will require the project proponent to obtain a Conditional Use Project (CUP) from the City to allow for the construction and operation of a solar facility, in the O/RA (Open Space/Residential/Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MWh of storage capacity (CUP 19-04). On May 11, 2021, the City of California adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use in O/RA zoned districts. Additionally, the project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines would be required to be preserved and what section lines would be removed.

The project proponent/operator is also requesting California Environmental Quality Act (CEQA) review for the project.

Table 1-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Map Codes, Existing and Proposed Zoning, and Acreage

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
Kern County					
1	470-020-19	8.5 (Kern County General Plan)	A	A	4.38
1	470-151-09	8.5 (Kern County General Plan)	A	A	19.62
1	470-151-15	8.5 (Kern County General Plan)	A	A	20.23
1	470-151-16	8.5 (Kern County General Plan)	A	A	20.40
1	470-151-17	8.5 (Kern County General Plan)	A	A	19.98
1	470-152-01	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	39.32
1	470-152-18	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	10.32
1	470-152-19	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	4.93
1	470-330-01	8.5 (Kern County General Plan)	PL RS	A	5.06
1	470-330-02	8.5 (Kern County General Plan)	PL RS	A	4.77
1	470-330-03	8.5 (Kern County General Plan)	A	A	19.86
1	470-330-04	8.5 (Kern County General Plan)	A	A	20.15
1	470-330-06	5.6 (Fremont Interim Rural Community Plan)	A-1	A	9.95
1	470-330-07	5.6 (Fremont Interim Rural Community Plan)	A-1	A	10.02
1	470-330-14	8.5 (Kern County General Plan)	PL RS	A	4.89
1	470-330-15	8.5 (Kern County General Plan)	PL RS	A	5.23
1	470-350-04	8.5 (Kern County General Plan)	A	A	18.65
1	470-350-05	8.5 (Kern County General Plan)	A	A	18.91

Table 1-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Map Codes, Existing and Proposed Zoning, and Acreage, continued

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
1	470-350-06	8.5 (Kern County General Plan)	A	A	18.89
1	470-350-07	8.5 (Kern County General Plan)	A	A	18.57
1	470-350-08	8.5 (Kern County General Plan)	A	A	19.93
1	470-360-01	8.5 (Kern County General Plan)	A	A	18.43
1	470-360-02	8.5 (Kern County General Plan)	A	A	17.85
1	470-360-05	8.5 (Kern County General Plan)	A	A	21.15
1	470-380-01	8.5 (Kern County General Plan)	A	A	19.92
1	470-380-04	8.5 (Kern County General Plan)	A	A	21.35
1	470-380-05	8.5 (Kern County General Plan)	A	A	17.34
1	470-380-06	8.5 (Kern County General Plan)	A	A	19.88
1	470-380-07	8.5 (Kern County General Plan)	A	A	21.95
1	470-020-08	8.5 (Kern County General Plan)	A	A	2.31
2	470-080-15	8.5 (Kern County General Plan)	A	A	20.27
2	470-080-16	8.5 (Kern County General Plan)	PL RS MH	A	10.07
2	470-080-17	8.5 (Kern County General Plan)	PL RS MH	A	10.10
2	470-080-32	8.5 (Kern County General Plan)	PL RS MH	A	10.07
2	470-322-13	5.6 (Kern County General Plan)	A-1 MH	A	2.39
2	470-322-15	5.6 (Kern County General Plan)	A-1	A	9.96
4	470-302-24	8.5 (Kern County General Plan)	PL RS MH	A	2.59
4	470-302-25	8.5 (Kern County General Plan)	PL RS MH	A	2.62
4	470-302-26	8.5 (Kern County General Plan)	PL RS MH	A	2.52
5	470-030-01	8.5 (Kern County General Plan)	A	A	79.22
5	469-170-10	8.5 (Kern County General Plan)	A	A	10.02
5	469-170-18	8.5 (Kern County General Plan)	A	A	39.49
Subtotal – Kern County					673.60
California City					
2	302-341-29	O/RA (California City General Plan)	O/RA	O/RA	168.79
2	302-342-01	O/RA (California City General Plan)	O/RA	O/RA	40.23
2	302-342-11	O/RA (California City General Plan)	O/RA	O/RA	2.67
2	302-342-12	O/RA (California City General Plan)	O/RA	O/RA	2.66
2	302-342-19	O/RA (California City General Plan)	O/RA	O/RA	29.69
2	302-342-25	O/RA (California City General Plan)	O/RA	O/RA	40.77
2	302-342-26	O/RA (California City General Plan)	O/RA	O/RA	39.89
2	302-342-27	O/RA (California City General Plan)	O/RA	O/RA	40.29
2	302-342-28	O/RA (California City General Plan)	O/RA	O/RA	40.68
2	302-290-03	O/RA (California City General Plan)	O/RA	O/RA	83.58
2	302-020-08	O/RA (California City General Plan)	O/RA	O/RA	40.17
2	302-020-09	O/RA (California City General Plan)	O/RA	O/RA	80.09
2	302-020-11	O/RA (California City General Plan)	O/RA	O/RA	163.68
2	302-020-14	O/RA (California City General Plan)	O/RA	O/RA	40.99
2	302-020-15	O/RA (California City General Plan)	O/RA	O/RA	10.52
2	302-020-16	O/RA (California City General Plan)	O/RA	O/RA	10.15
2	302-020-17	O/RA (California City General Plan)	O/RA	O/RA	9.59
2	302-020-18	O/RA (California City General Plan)	O/RA	O/RA	9.98
2	302-470-14	O/RA (California City General Plan)	O/RA	O/RA	20.20
3	302-321-01	O/RA (California City General Plan)	O/RA	O/RA	160.93

Table 1-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Map Codes, Existing and Proposed Zoning, and Acreage, continued

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
3	302-322-01	O/RA (California City General Plan)	O/RA	O/RA	10.10
3	302-322-02	O/RA (California City General Plan)	O/RA	O/RA	10.09
3	302-322-04	O/RA (California City General Plan)	O/RA	O/RA	10.24
3	302-322-05	O/RA (California City General Plan)	O/RA	O/RA	10.28
3	302-322-06	O/RA (California City General Plan)	O/RA	O/RA	40.04
3	302-322-08	O/RA (California City General Plan)	O/RA	O/RA	10.33
3	302-322-09	O/RA (California City General Plan)	O/RA	O/RA	40.50
3	302-322-10	O/RA (California City General Plan)	O/RA	O/RA	10.27
3	302-322-11	O/RA (California City General Plan)	O/RA	O/RA	10.29
3	302-325-49	O/RA (California City General Plan)	O/RA	O/RA	9.74
3	302-330-33	O/RA (California City General Plan)	O/RA	O/RA	20.21
3	302-330-37	O/RA (California City General Plan)	O/RA	O/RA	20.38
3	302-305-15	O/RA (California City General Plan)	O/RA	O/RA	43.54
Subtotal – California City					1,281.53
Total					1,955.13
Kern County General Plan Map Code Designation: 8.5 (Resource Management, Min. 20 Acre Parcel Size) Fremont Interim Rural Community Plan Map Code Designation: 5.6 (Min. 2.5 Gross Acres/Unit) Kern County Zoning District: A (Exclusive Agriculture); A-1 (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) California City General Plan Designation: O/RA = Controlled Development & Open Space California City Zoning District: O/RA = Open Space/Residential/Agricultural					

This Draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under CEQA. The Draft EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of local, State, and federal permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested: CUP (CUP #28, Map 152); CUP to allow for construction and operation of a solar facility in the O/RA (Open Space/Residential/Agricultural) zone – California City (CUP 19-04); GPA to amend to the Circulation Element of the Kern County General Plan (GPA #10, Map 152); the requested ZCC required for the project (ZCC #14, Map 152); and the non-summary vacations of public access easements within the project boundaries.

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

1.2 Project Summary

The proposed project would develop a solar PV generating facility. As shown in Chapter 3, *Project Description*, in Figure 3-1, *Vicinity Map*, and Figure 3-2, *Project Site Boundaries*, of this EIR, the project is approximately 1,955 acres located in the south-eastern portion of Kern County and portions of the City of California City, north of the California City Municipal Airport and east of State Route 14 (SR 14). The project would generate a total of 500 MW of AC power and up to 600 MWh of energy storage capacity for delivery to the statewide grid. The project would include a 230 kV overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. The project intends to share the previously approved Eland 1 Solar Facility's (Eland 1) gen-tie line and right-of-way (ROW), See Section 1.5.4, *Project Characteristics*, below, for a detailed description of the components of the proposed project, including solar PV panels, solar trackers, electrical collection systems, the energy storage system, substations, the Operations & Maintenance (O&M) facility, onsite meteorological stations, site access and security, and electrical interconnection to transmission owner infrastructure.

1.2.1 Entitlements Required

The Kern County Planning and Natural Resources Department, the lead agency for the project, has discretionary authority over the proposed project. To implement this project, the project operator would need to obtain, at a minimum, the permits/approvals listed below. Additionally, the EIR, once certified, will be used to satisfy the CEQA requirements for the approvals detailed below. In addition to those listed below, other additional permits or approvals from responsible agencies may be required for the project.

Kern County (Lead Agency)

- Consideration and certification of Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Adoption of proposed Mitigation Measure Monitoring Program
- Approval by the Kern County Board of Supervisors for proposed changes in zone classification
- Approval by the Kern County Board of Supervisors for proposed conditional use permits for the project site
- Approval by the Kern County Board of Supervisors for proposed General Plan Amendments to the Circulation Element
- Approval by the Kern County Board of Supervisors for the proposed non-summary vacation requests
- Kern County grading and building permits
- Kern County encroachment permits
- Kern County franchise agreements
- Kern County public road(s) and easement(s) vacation(s) (if required)

- Kern County Fire Safety Plan

California City (Responsible Agency)

- Consideration of a previously certified Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Adoption of proposed Mitigation Measure Monitoring Program
- Approval by the Planning Commission for proposed changes in zone classification (if required)
- Approval by the California City Planning Commission for proposed conditional use permits for the project site
- California City grading and building permits
- California City franchise agreements/business license
- California City encroachment permit
- California City public road(s) and easement(s) vacation(s) (if required)
- California City Fire Strategic Plan
- Development Agreement (if required)

Other Responsible Agency Approvals

- Federal Aviation Administration review
- US Fish and Wildlife Service consultation (if required)
- US Fish and Wildlife Service Habitat Conservation Plan (if required)
- Bureau of Land Management Right of Way Agreement for Limited Improvements for Access Roads (if required)
- California Department of Fish and Wildlife, Lake and Streambed Alteration Agreement or Incidental Take Permit or Habitat Conservation Plan (if required)
- State Water Resources Control Board, National Pollutant Discharge Elimination System Construction General Permit
- California Department of Transportation Right-of-Way Encroachment Permit and Permit for Transport of Oversized Loads (if required)
- Union Pacific Railroad Wireline Crossing Agreement
- Eastern Kern County 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 Kudu Solar Project would be subject to its own use permits, conditions of approval, interconnection agreements, and power purchase agreement (PPA). The project would include a 230 kV overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation.

As stated above, the proposed project intends to share the previously approved Eland 1 Solar Facility's (Eland 1) gen-tie line and right-of-way (ROW), which may require stringing additional conductor on the Eland 1's transmission structures, or increasing the capacity of Eland 1's gen-tie by reconductoring the line with thicker cable. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the approved Eland 1 Solar Project Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029).

1.4 Purpose and Use of the EIR

An EIR is a public informational document used in the planning decision-making process. This project-level EIR will analyze the environmental impacts of the proposed project. The Kern County Planning Commission will consider the information in this EIR, including the public comments and staff response to those comments, during the public hearing process. As a legislative action, the final decision is made by the Kern County Board of Supervisors, which 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 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 purpose 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 Section 15087 of the *CEQA Guidelines*. 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 within the Fremont Valley, southwest of Koehn Dry Lake in the western portion of the Mojave Desert. The site is located in portions of unincorporated Kern County and the City of California City, north of the California City Municipal Airport; refer to Figure 3-1, *Vicinity Map*. The project site is relatively flat with elevations ranging from about 2,100 feet to 2,400 feet above mean sea level.

State Route 14, a four-lane divided highway located approximately one mile to the west, provides regional access to the project site. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site. The proposed project boundaries are illustrated in Figure 3-2, *Project Site Boundaries*. Refer also to Figure 3-3, *Aerial Photograph*, and Figure 3-4A, *Parcel Map*. According to the US Geological Survey (USGS), the project site is located on the California City North and Mojave North East 7.5 minute USGS Quadrangles at Township 31S, Range 37E – portions of Sections 14, 15, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and Township 32S, Range 37E – portions of Sections 1, 2, 3, 4, 9, 10, 11, 12, San Bernardino Base and Meridian.

1.5.2 Surrounding Land Uses and Project Site Conditions

The project site is predominantly vacant and undeveloped land located in portions of unincorporated Kern County and California City, north of the California City Municipal Airport. The site is adjacent to the approved Eland Solar Farm, south of the existing Springbok 1 and 2 Solar Farms, and southeast of the Los Angeles Department of Water and Power Beacon solar facility. State Route 14 runs near the western border of the project site, and an existing Union Pacific rail line runs through the project site. The project site is transected by both east–west traversing Phillips Road and Washburn Road, with the Southern Pacific Railroad on its western boundary.

The nearest residences in Kern County (in the community of Fremont) are located approximately 1,200 feet from the western project parcels (Site 1) and the nearest residences in California City are located approximately 3,300 feet from the southernmost project parcel. Some of the proposed routes for the collector lines would run adjacent to noise-sensitive receivers in a single-family residential neighborhood north of Phillips Road. While the studies included in the appendices identify the closest sensitive receptors to the project site as residences ranging from 0.22 to 0.63 miles away, County Staff has reviewed the area and identified four (4) structures in the vicinity (within a distance of approximately 1,300 feet) of the unincorporated Kern County portion of the project site that could be considered sensitive receptors.

Based on a review of the Federal Emergency Management Act (FEMA) Flood Insurance Rate Maps, portions of the solar facility site are mapped in 100-year (Zone A) floodplains. Zone A is defined as areas subject to inundation by the 1 percent annual chance flood event generally determined using approximate methodologies. The remainder of the project site is mapped as Zone X, which is defined as areas of minimal flood hazard that are outside of the Special Flood Hazard Area and beyond the limits of the 0.2 percent annual chance (500-year) flood. Refer to Figure 3-5, *FEMA Map*.

The southern portion of the project site is located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP). The project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (Assessor’s Parcel Number [APN] 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APNs 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). Figure 3-6, *ALUCP in Relation to the Project Site*, shows the project site and its vicinity, with respect to the ALUCP zones.

The project site is not designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The project site is designated as nonagricultural and natural vegetation. There are no lands designated as important farmland located adjacent to or in the vicinity of the project site. Additionally, no lands affected by the project are subject to a Williamson Act Land Use contract, nor are they located within a Kern County Agricultural Preserve.

The project site is not within a mineral recovery area or within a designated mineral and petroleum resource site designated by the Kern County or California City General Plans, nor is it identified as a mineral resource zone by the Department of Conservation’s California Geologic Energy Management Division (CalGEM) State Mining and Geology Board.& Open

The project would be served by the Kern County Sheriff’s Office and California City Police Department for law enforcement and public safety and Kern County Fire Department and California City Fire Department for fire suppression and emergency medical services. The portion of the project site located within unincorporated Kern County would be served by the Kern County Sheriff’s Department – Mojave Substation located at 1771 Highway 58 in Mojave. The portion of the project site located within California City would be served by the police station located at 21130 Hacienda Boulevard in California City.

The portion of the project site located within unincorporated Kern County would be served by the Kern County Fire Department Station #14 located at 1953 Mojave-Barstow Highway in Mojave. The portion of the project site located within California City would be served by Fire Station #85 located at 20890 Hacienda Boulevard in California City. The nearest hospitals are the Antelope Valley Hospital, located at 1600 West Avenue J, in the City of Lancaster, approximately 33 miles to the southwest and the Adventist Health Tehachapi Valley Hospital, located at 1100 Magellan Drive in the City of Tehachapi, approximately 25 miles to the west. The closest school to the project site is the California City Learning Academy, located approximately 2 miles southeast of the southern portion of the project site in California City.

Table 1-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, presents the existing land uses, designations, and zoning classification for the project site and surrounding area.

Table 1-2. Existing On- and Off-Site Land Use, General Plan Map Code Designations, and Zoning

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Kern County			
Project Site	Undeveloped	4.2/5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit); 8.5 (Resource Management, Min. 20 Acre Parcel Size)	A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)

Table 1-2. Existing On- and Off-Site Land Use, General Plan Map Code Designations, and Zoning, continued

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
North	Undeveloped, sparse rural residential dwellings	5.4 - Min. 4 Units/Net Acre (Fremont Interim Rural Community Plan) 5.6 - Min. 2.5 Gross Acres/Unit (Fremont Interim Rural Community Plan) 5.8 - Min. 20 Gross Acres/Unit (Fremont Interim Rural Community Plan) 8.5 - Resource Management, Min. 20 Acre Parcel Size (Kern County General Plan) 8.5/2.1 - Resource Management, Min. 20 Acre Parcel Size/Seismic Hazard (Kern County General Plan) 8.5/2.5 - Resource Management, Min. 20 Acre Parcel Size/Flood Hazard (Kern County General Plan)	A (Exclusive Agriculture); FPS (Floodplain Secondary Combining); A-1 (Limited Agriculture); PL RS (Platted Lands, Residential Suburban Combining); FP (Floodplain Combining); MH (Mobile Home Combining); E(20) (Estate 20 Acres); GH (Geologic Hazard Combining)
East	Undeveloped, sparse rural residential dwellings, BLM Administered Land	8.5 (Resource Management, Min. 20 Acre Parcel Size); 1.2 (Incorporated Cities)	A (Exclusive Agriculture); FP (Floodplain Combining); FPS (Floodplain Secondary Combining); PL RS (Platted Lands, Residential Suburban Combining); MH (Mobile Home Combining); GH (Geologic Hazard Combining) California City
South	Undeveloped, California City Airport	1.2 (Incorporated Cities)	California City
West	Undeveloped, State Route 14, BLM Administered Land; Union Pacific Railroad	1.1 – State and Federal Land (Kern County General Plan) 1.2 - Incorporated Cities (Kern County General Plan) 8.5 - Resource Management, Min. 20 Acre Parcel Size (Kern County General Plan) 8.5/2.5 - Resource Management, Min. 20 Acre Parcel Size/Flood Hazard (Kern County General Plan)	A (Exclusive Agriculture); FP (Floodplain Combining); FPS (Floodplain Secondary Combining); A-1 (Limited Agriculture); E(20) (Estate 20 Acres); PL (Platted Lands); GH (Geologic Hazard Combining) California City
California City			
Project Site	Undeveloped	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)
North	Undeveloped, sparse rural residential dwellings	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural); Kern County
East	Undeveloped, BLM Administered Land	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)
South	Undeveloped, California City Airport, scattered Industrial Development	O/RA - Controlled Development & Open Space (California City General Plan) M1 - Light Industrial and Research (California City General Plan)	O/RA (Open Space/Residential/Agricultural) M1 - Light Industrial

Table 1-2. Existing On- and Off-Site Land Use, General Plan Map Code Designations, and Zoning, continued

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
West	Undeveloped State Route 14, BLM Administered Land	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)

1.5.3 Project Objectives

The project has the following objectives:

- Construct and operate a solar energy facility capable of producing up to 500 MW of electricity and up to 600 MW of energy storage to assist the State of California in achieving its 50 percent renewable portfolio standard by 2030
- Provide renewable energy to the electric grid to meet increasing demand for in-state generation
- Integrate operating facilities with other existing solar projects in the vicinity to maximize economies of scale
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County
- Work toward California City’s goal of encouraging commercial, industrial and government (public facilities) entities to create sustainable employment through jobs paying higher wages in compliance with the environmental standards for the City and the region.
- Site and design the project in an environmentally responsible manner consistent with current Kern County and City of California City guidelines.
- Promote economic development and bring living-wage jobs to the region throughout the life of the proposed project.

1.5.4 Project Characteristics

The proposed project includes the development of a solar PV energy facility to generate up to 500 MW of AC power, 600 MWh energy storage capacity, and associated infrastructure. The project site is shown in Chapter 3, *Project Description*, Figure 3-2, *Project Site Boundaries*, of this EIR. Conceptual site plans for the project site are shown in Figure 3-14, *Overall Site Plan*, along with more detailed plans in Figures 3-4B to 3-4F. The project would include the following components:

- Installation of up to 500 MW of solar PV modules, mounted in either a fixed-tilt configuration, with the panels oriented toward the south, or using tracker mount systems (either single- or dual-axis). The modules are expected to remain between 6 and 8 feet high;

- Installation of an energy storage facility and accessories that would provide energy storage capacity of up to 600 MWh for the electrical grid;
- A collection system of cables for delivering photovoltaic energy to inverter stations generally consisting of one or more inverter modules, a unit transformer, and voltage switch gear;
- One or more on-site substation(s) or switchyard(s) which would receive electricity from inverter stations through overhead and/or underground collector lines. Each substation would occupy an area of approximately 5 acres;
- 230 kV overhead and/or underground gen-tie lines (shared with previously-approved Eland 1 Solar Project gen-tie line and right-of-way);
- An O&M facility is possible for the project site, though the proposed project may share O&M facilities with one or more nearby solar projects and/or may be remotely operated;
- Telecommunications equipment, including underground and overhead fiber optics, and an on-site meteorological station;
- Onsite access roads; and
- Perimeter security fencing and shielded nighttime directional lighting.

The components listed above are described in more detail below.

Solar PV Module Configuration

The proposed project would use PV panels or modules (including but not limited to concentrated PV technology) on mounting frameworks to convert sunlight directly into electricity. Individual panels would be installed on either fixed-tilt or tracker mount systems (single- or dual-axis, using galvanized steel or aluminum). If the panels are configured for fixed-tilt, the panels would be oriented toward the south. For tracking configurations, the panels would rotate to follow the sun over the course of the day. Although the panels could stand up to 20 feet high, depending on the mounting system used and on County building codes, panels are expected to remain between 6 and 8 feet high. Refer to Figure 3-15, *Typical Solar Array and O&M Areas*, and Figure 3-16, *Representative Examples of Photovoltaic Panel/Mounting Configuration*, depicts representative examples of photovoltaic panel/mounting configurations.

The foundations for the mounting structures can extend up to 10 feet below ground, depending on the structure, soil conditions, and wind loads, and may be encased in concrete or utilize small concrete footings. Final solar panel layout and spacing would be optimized for project area characteristics and the desired energy production profile.

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.

Site Access

Construction and operation traffic would access the project site from Phillips Road, Gantt Road, and Neuralia Road or through the Eland 1 Solar Facility project site. The proposed project would require

driveway improvements, to be designed and constructed per Kern County and City of California City improvement standards. Any off-site roadway improvements would be constructed in conformance with Caltrans and/or County and/or City code and regulations, as necessary and applicable.

Collection, Inverter, and Transformer Systems

Photovoltaic energy is delivered via cable to inverter stations, generally located near the center of each block of solar panels. Inverter stations typically comprise of one or more inverter modules with a rated power of up to 7.5 MW each, a unit transformer, and voltage switch gear. The unit transformer and voltage switch gear are housed in steel enclosures, while the inverter module(s) are housed in cabinets. Depending on the vendor selected, the inverter station may lie within an enclosed or canopied metal structure, typically on a skid or concrete mounted pad. Figure 3-17, *Representative Examples of Typical Inverter Stations*, depicts representative examples of typical inverter stations.

Energy Storage System

The proposed project may include one or more energy storage systems (ESS), located at or near a substation/switchyard (on-site or shared) and/or at the inverter stations, but possibly elsewhere on-site. Such large-scale ESSs would be up to 600 MWh in capacity and up to 25 acres in total area. ESSs consist of modular and scalable battery packs and battery control systems that conform to U.S. national safety standards.

The ESS modules, which could include commercially available lithium or flow batteries, typically consist of standard International Organization for Standardization containers (approximately 40 feet in length by 8 feet in width by 8 feet in height) housed in pad- or post-mounted, stackable metal structures, but may also be housed in a dedicated building(s) in compliance with applicable regulations. The maximum height of a dedicated structure is not expected to exceed 25 feet. The actual dimensions and number of energy storage modules and structures vary depending on the application, supplier, and configuration chosen, as well as on off-taker/power purchase agreement requirements and on County building standards. The proposed project may share an ESS with one or more nearby solar projects or may operate one or more stand-alone ESS facilities within the project site. Figure 3-18, *Representative Examples of Typical Battery Storage Energy Systems*, depicts representative examples of typical ESSs.

The ESS would be unmanned, remotely controlled containers that would be periodically inspected for maintenance purposes. The ESS would have a fire rating in conformance with Kern County and national ESS fire standard NFPA 855 and specialized fire suppression systems would be installed for each of the battery compartments, where required by NFPA 855 and UL9540A standards.

On-Site Meteorological Station

A solar meteorological station would be on-site, the location of which would be determined at final project design. The meteorological station would include solar energy (irradiance) meters, in addition to an air temperature sensor and wind anemometer. It is anticipated that the maximum height of this equipment would be 20 feet.

Substation

Output from the inverter stations would be transferred via electrical conduits and electrical conductor wires to one or more on-site substation(s) or switchyard(s) (collectively referred to as a “substation” herein), or the Eland Substation. The proposed project and any associated ESS would have their own dedicated substation equipment located either within the project site or within the Eland Substation footprint. Dedicated equipment may incorporate several components, including auxiliary power transformers, distribution cabinets, revenue metering systems, microwave transmission tower, and voltage switch gear. Each substation would occupy an area of approximately 5 acres, secured separately by a chain-link fence. The final location(s) would be determined before issuance of building permits.

Substations typically include a small control building (roughly 500 square feet) standing approximately 10 feet tall. The building is either prefabricated concrete or steel housing with rooms for the voltage switch gear and the metering equipment, a room for the station supply transformer, and a separate control technology room in which the main computer, the intrusion detection system, and the main distribution equipment are housed. Components of this building (e.g., control technology room and intrusion detection system) may alternatively be located at the O&M building(s). Figure 3-19, *Representative Example of Typical Substation Design*, depicts a representative example of a typical substation.

Generation -Transmission Line

From the proposed project’s substation(s), power would be transmitted to the Los Angeles Department of Water and Power’s Barren Ridge Substation via a 230 kV overhead and/or underground gen-tie line. The proposed gen-tie alignment is shown on Figure 3-2, *Project Site Boundaries*. The proposed project intends to share the Eland 1 Solar Facility’s gen-tie line and ROW, which may require stringing additional line on the Eland 1’s transmission structures, or increasing the capacity of the Eland 1’s gen-tie by reconductoring the line with thicker cable. As needed, the Eland 1 Solar Facility’s gen-tie would be sized to accommodate the proposed project. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the previously approved Eland 1 Solar Project Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029).

Water Usage

Construction

During construction, water would be required for common construction-related purposes, including but not limited to dust suppression, soil compaction, and grading. Total water usage during the 12- to 18-month construction period is not expected to exceed 400 acre-feet. Water demand would be the same during normal or dry years. It is anticipated that water would be obtained from new or existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok Solar Facility projects, the Eland 1 Solar Facility project, or a commercial source. Temporary, portable water tanks may be placed on-site to store water for construction purposes. If the project proponent determines that off-site water would be used, the project proponent would submit evidence of an agreement to provide sufficient water quantities from the proposed off-site water purveyor(s). Portable restroom facilities would be provided to the workers during construction.

Operation

Water demand for panel washing and O&M domestic use (i.e., sinks and lavatories, and facilities maintenance) is not expected to exceed 50 acre-feet per year. It is anticipated that water would be obtained from new or existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok Solar Facility projects, the Eland 1 Solar Facility project, or a commercial source. If the project proponent determines that off-site water would be used, the project proponent would submit evidence of an agreement to provide sufficient water quantities from the proposed off-site water purveyor(s). A small water treatment system, consisting of a small filtration or reverse osmosis system, may be installed adjacent to the O&M building to provide deionized water for panel washing.

Water Storage Tank(s)

One or more plastic or steel above-ground water storage tanks with a total capacity of up to 50,000 gallons may be placed on-site near the O&M building. The storage tank(s) near the O&M building would have the appropriate fire department connections to be used for fire suppression purposes.

Operations and Maintenance Building

The proposed project may include an O&M building of approximately 40 feet by 80 feet in size, up to 15 feet in height, with associated on-site unpaved parking. The O&M building would be steel framed, with metal siding and roof panels. The O&M building may include the following:

- Office
- Repair building/parts storage
- Control room
- Restroom
- Septic tank and leach field
- Potable water tank for handwashing

Septic tank, leach field, roads, driveways, and parking lot entrances would be constructed in accordance with Kern County and California City improvement standards. Parking spaces and walkways would be constructed in accordance with all California Accessibility Regulations. As previously mentioned above, the proposed project may share O&M facilities with one or more nearby solar projects in the area and/or may be remotely operated.

Project Site Security and Fencing

The project site may be enclosed within a chain-link fence with barbed wire measuring up to 8 feet in height (from finished grade). An intrusion alarm system may also be installed, comprised of sensor cables integrated into the perimeter fence, intrusion detection cabinets placed approximately every 1,500 feet along the perimeter fence, and an intrusions control unit, located either in the substation control room or at the O&M building, or similar technology. The proposed project may include additional security measures including, but not limited to, barbed wire, low voltage fencing with warning reflective signage, controlled

access points, security alarms, security camera systems, sensor lights, and security guard vehicle patrols to deter trespassing and/or unauthorized activities that could interfere with operation of the proposed project.

Controlled access gates would be maintained at the main entrances to the project site. Project access would be provided to off-site emergency response teams that respond in the event of an “after-hours” emergency. Enclosure gates would be manually operated with a key provided in an identified key box location.

Project Site Lighting

Proposed nighttime lighting on-site would be minimal and is anticipated to be installed at the access gates, substation(s), O&M building, and inverters to allow for access and emergency maintenance. Nighttime lighting would provide O&M personnel with illumination for both normal and emergency operating conditions. The minimum illumination needed to ensure worker safety and security on-site would be provided. All nighttime lighting installed would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as required by Kern County Zoning Ordinance (Chapter 19.81 - *Outdoor Lighting-Dark Skies Ordinance*) requirements. Additionally, motion-sensitive cameras would be installed within the solar fields in proximity to the inverters for purposes of security.

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 Appendix G of the CEQA *Guidelines* except Mineral Resources, Population and Housing, and Recreation.

1.6.1 Impacts Not Further Considered in this EIR

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

- Mineral Resources
- Population and Housing
- Recreation

1.6.2 Impacts of the Project

Sections 4.1 through 4.17 in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, provide a detailed discussion of the environmental setting, impacts associated with the project, and mitigation

measures designed to reduce significant impacts to less than significant levels, when feasible. The impacts, mitigation measures, and residual impacts for the project are summarized in Table 1-7, *Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County*, and Table 1-8, *Summary of Impacts, Mitigation Measures, and Levels of Significance – California City*, located at the end of this chapter, and are discussed further below.

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

- Aesthetics
- 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
- Noise
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfires

1.6.3 Less than Significant Impacts

Table 1-3, *Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation*, presents those impacts of the project that were determined to be less than significant by themselves, or less than significant with implementation of mitigation measures. Less than significant cumulative impacts are also included in this table. Sections 4.1 through 4.17 of this EIR present detailed analysis of these impacts and describe the means by which the mitigation measure listed in Table 1-3 would reduce impacts to a less than significant level.

Table 1-3. Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation

Impact	Mitigation Measures
Agriculture and Forest Resources (Project and Cumulative)	No mitigation required
Biological Resources (Project)	MM 4.1-5KC and MM 4.1-5CC; MM 4.4-1KC through MM 4.4-23KC; MM 4.4-1CC through MM 4.4-22CC
Cultural Resources (Project and Cumulative)	MM 4.5-1KC through MM 4.5-4KC; MM 4.5-1CC through MM 4.5-4CC
Energy (Project and Cumulative)	MM 4.3-1KC and MM 4.3-1CC
Geology and Soils (Project and Cumulative)	MM 4.7-1KC through MM 4.7-6KC; MM 4.7-1CC through MM 4.7-6CC; MM 4.10-1KC, MM 4.10-2KC, MM 4.10-1CC, and MM 4.10-2CC
Greenhouse Gas Emissions (Project and Cumulative)	No mitigation required
Hazards and Hazardous Materials (Project)	MM 4.9-1KC through MM 4.9-3KC; MM 4.9-1CC through MM 4.9-3CC; MM 4.13-1KC and MM 4.13-1CC; MM 4.16-1KC and MM 4.16-1CC
Hydrology and Water Quality (Project and Cumulative)	MM 4.9-1KC; MM 4.10-1KC through 4.10-3KC; MM 4.9-1CC and MM 4.10-1CC through MM 4.10-3CC
Land Use Planning (Project and Cumulative)	MM 4.9-3KC and MM 4.9-3CC; MM 4.11-1KC and MM 4.11-1CC; MM 4.11-2KC and MM 4.11-2CC
Noise (Project and Cumulative)	MM 4.9-3KC and MM 4.9-3CC; MM 4.12-1KC and MM 4.12-2KC; MM 4.12-1CC and MM 4.12-2CC
Public Services (Project and Cumulative)	MM 4.13-1KC through MM 4.13-5KC and MM 4.13-1CC through MM 4.13-5CC
Transportation (Project and Cumulative)	MM 4.14-1KC and MM 4.14-1CC
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1KC through MM 4.5-4KC; and MM 4.5-1CC through MM 4.5-4CC
Utilities and Service Systems (Project and Cumulative)	MM 4.10-1KC, MM 4.10-1CC, MM 4.10-2KC, MM 4.10-2CC; MM 4.16-1KC, MM 4.16-1CC
Wildfire (Project)	MM 4.13-1KC and MM 4.13-1CC; MM 4.14-1KC and MM 4.14-1CC

1.6.4 Significant and Unavoidable Impacts

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

According to Section 15355 of the CEQA *Guidelines*, 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 (project and cumulative)
- Air Quality (project and cumulative)
- Biological Resources (cumulative)
- Hazards and Hazardous Materials (cumulative)
- Wildfire (cumulative)

Table 1-4. Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Aesthetics	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 4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM 4.1-4CC would be incorporated to reduce visual impacts to the extent feasible, which include requirements to provide ongoing site maintenance including trash and debris removal; preserve and enhance scenic vegetation where possible; install visually screening features that would limit the visibility of project features; minimize color contrast through the selection of appropriate paint colors and surface treatments for project facilities; and, limit impacts from the location of tall, intrusive project facilities near public viewing areas. However, because there	The project would result in cumulative significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-7KC and MM 4.1-1CC through MM 4.1-7CC, the project’s contribution to significant impacts associated	MM 4.1-1KC through MM 4.1-7KC and MM 4.1-1CC through MM 4.1-7CC

Table 1-4. Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility, continued

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
	<p>are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, the project would substantially degrade the existing visual character and scenic quality of public views of the site and its surroundings, as seen and described from the KOPs, and impacts on visual resources would remain significant and unavoidable.</p>	<p>with visual character in the Fremont Valley would be significant and unavoidable.</p>	
<p>Air Quality</p>	<p>Despite the implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC, exposure to dust resulting from construction could still occur, increasing the susceptibility to contracting COVID-19 and increasing the severity of the disease. Further, NO_x and PM₁₀ emissions would be considered cumulatively considerable, despite implementation of mitigation measures. Therefore, impacts in this regard would remain significant and unavoidable.</p>	<p>If construction of the proposed projects in the project’s vicinity overlap, emissions of NO_x and PM₁₀ would be cumulatively considerable. Even with implementation of mitigation measures MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC, cumulative temporary construction impacts are considered significant and unavoidable.</p>	<p>MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC</p>
<p>Biological Resources</p>	<p>There would be no significant and unavoidable project impacts.</p>	<p>Given the number of present and reasonably foreseeable future development projects in the Fremont Valley, the project, when combined with these other projects, would have an incremental contribution to the cumulative loss of foraging and nesting habitat for special-status species. While the project would have less than significant impacts on sensitive biological resources with implementation of Mitigation Measures MM 4.1-5KC, MM 4.4-1KC through MM 4.4-23KC and MM 4.1-5CC, and MM 4.4-1CC through MM 4.4-22CC at the project level, when combined with related development projects, cumulative impacts would be significant and unavoidable.</p>	<p>MM 4.1-3KC, MM 4.1-7KC, MM 4.4-1KC through MM 4.4-23KC and MM 4.1-3CC, MM 4.1-7CC, and MM 4.4-1CC through MM 4.4-22CC</p>

Table 1-4. Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility, continued

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Hazards and Hazardous Materials	There would be no significant and unavoidable project impacts	Given the project’s location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to impairment or interference with an adopted emergency response plan or emergency evacuation plan. Further, the project and related projects would have the potential to result in a cumulative impact from the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. Cumulative impacts in this regard are considered significant and unavoidable .	MM 4.9-1KC through MM 4.9-3KC, MM 4.9-1CC through MM 4.9-3CC, MM 4.13-1KC, MM 4.13-1CC, MM 4.16-1KC, and MM 4.16-1CC
Wildfire	There would be no significant and unavoidable project impacts	Given the project’s location in a rural area and limited infrastructure, the project, in combination with related projects, would have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and to infrastructure improvements that may increase fire risk or result in significant impacts. Given the project’s location combined with the fact that certain cumulative projects in the project vicinity may have a greater risk of wildfire, the project and related projects are considered to have the potential to result in a significant cumulative impact related to exposure of project occupants to pollutant concentrations from a wildfire. As such, the project, in combination with other related projects, could result in significant and unavoidable cumulative impacts .	MM 4.13-1KC and MM 4.13-1CC

1.6.5 Irreversible Impacts

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

Build-out of the project would commit nonrenewable resources during project construction. During project operations, oil, gases, 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, Fremont Interim Rural Community Plan, and the California City General Plan, as a matter of public policy, those commitments have been determined to be acceptable. The Kern County General Plan and California City General Plan ensure that any irreversible environmental changes associated with those comments 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. Section 15126.2(d) of the CEQA *Guidelines* provides the following guidance on growth-inducing impacts:

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. It is estimated that up to 1,000 workers per day (during peak construction periods) would be required during construction of the proposed project. Construction workers are expected to travel to the site from various local communities within Kern County and locations throughout Southern California, and the number of workers expected to permanently relocate to the surrounding local area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby communities of Mojave, California City, Rosamond, Tehachapi, and Lancaster. Therefore, the project is not anticipated to directly or indirectly induce the development of any new local housing or businesses. During the operational phase, the project would employ up to 20 FTE personnel (or personnel hours totaling 20 FTE positions, i.e., an average of 1,800 personnel hours per week), who would be hired locally or who would commute to the site. Existing housing stock would accommodate operations personnel should they relocate to the area. The proposed project would therefore not result in a large increase in employment that would significantly induce local population growth.

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

1.7.1 Alternatives Considered and Rejected

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA *Guidelines*, Section 15126.6(c)). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (CEQA *Guidelines*, Section 15126(f)(3)). Kern County considered several alternatives to reduce impacts to aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), hazards and hazardous materials (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

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 500 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.

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, low maintenance and recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels, require Federal Aviation Administration (FAA) lighting, and are more visible from many viewpoints.
- It may conflict with the City of California City Municipal Airport, Kern County Airport Land Use Compatibility Plan, and the Edwards Air Force Base flight operations due to the heights of the turbines.
- 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.

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) increased 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 manner 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 including 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 may conflict with the Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan, and the Edwards Air Force Base due to the heights of the cooling towers and smoke stacks.
- It would not contribute to the statewide renewable energy and GHG emission reduction objectives as this alternative would use nonrenewable energy to produce electricity.

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 Fremont Valley, similar to the project. This alternative is assumed to involve construction of a 500 MW PV solar facility with up to 600 MWh of energy storage on a site totaling approximately 1,955 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.

Fremont Valley 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 Fremont Valley, alternative project sites in the area are likely to have similar project and cumulatively significant impacts after mitigation, including cumulatively significant impacts to aesthetics, air quality,

biological resources, hazards, and wildfire. 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.

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 were evaluated, which are described in the sections below:

- Alternative 1: No Project Alternative (required by CEQA)
- Alternative 2: General 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 1-5, *Summary of Proposed Project and Development Alternatives*, provides a summary description, basis for analysis, and applicable feasibility of each development alternative. A complete discussion of each alternative is provided below.

Table 1-5. Summary of Proposed Project and Development Alternatives

Alternative	Description	Basis for Selection and Summary of Analysis
Proposed Project	Construction and operation of a solar facility on approximately 1,955 acres would generate up to 500 MW of electricity and up to 600 MWh of energy storage capacity. The project would be supported by a 230 kV overhead and/or underground electrical transmission line(s) (gen-ties) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power’s Barren Ridge Substation. The proposed project intends to share the Eland 1 Solar Project gen-tie line and right-of-way, which may require stringing additional line on the Eland 1 transmission structures, or increasing the capacity of the Eland 1 gen-tie by reconductoring the line with thicker cable. Approval of the project would require one zone case change, one conditional use permit, one General Plan amendment (Circulation Element), and non-summary vacations of public access easements from Kern County, and one conditional use permit from the City of California City.	N/A

Table 1-5. Summary of Proposed Project and Development Alternatives, continued

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA. • Avoids the need for a general plan amendment, zone case changes, conditional use permits, and non-summary vacations from Kern County. • Avoids the need for a conditional use permit from the City of California City. • Avoids all significant and unavoidable impacts. • Would not offset GHG emissions from nonrenewable energy generation, thus greater impacts on GHG emissions. • Less impact in all remaining environmental issue areas. • Does not meet any of the project objectives.
Alternative 2: General Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the Kern County General Plan, California City General Plan, land use designations, zoning classifications, and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids the need for a general plan amendment and zone case changes from Kern County. • Avoids the need for a conditional use permit from the City of California City. • Reduces impacts on aesthetics, agriculture and forestry resources, and wildfire. • Similar impacts on hazards and hazardous materials. • No impacts on land use and planning. • Greater overall impacts in all remaining environmental issue areas. • Does not meet any project objectives.
Alternative 3: Reduced Acreage Alternative	Construction and operation of multiple solar facilities on a portion of the proposed project site on approximately 937 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 240 MW of AC power, with up to approximately 288 MWh of energy storage. As with the proposed project, this alternative would also require a general plan amendment, zone case change, conditional use permit, and non-summary vacations of public access easements from Kern County, and a conditional use permit from the City of California City.	<ul style="list-style-type: none"> • Reduces, but results in similar impacts on aesthetics, air quality, biological resources, hazards and hazardous materials, land use and planning, noise, and public services. • Reduces impacts in all remaining environmental issue areas. • Reduces benefit of offsetting GHG emissions from nonrenewable energy generation, thus greater GHG emissions impact. • Does not meet all the project objectives.
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 500 MW of PV solar distributed on rooftops throughout western Antelope Valley. Electricity generated would be for on-site use only. No energy storage would be included.	<ul style="list-style-type: none"> • Avoids the need for general plan amendments and zone changes at the project site, but may require other entitlements on the site, such as a CUP or variance. • Avoids significant and unavoidable impacts associated with aesthetics, air quality, biological resources, and hazards. • Reduces benefit of offsetting GHG emissions from nonrenewable energy generation by utility purveyors. • No impacts on land use and planning. • Similar impacts on energy. • Less impacts on all remaining issue areas. • Does not meet all the project objectives nor does it account for the energy storage component of the project.

1.7.3 Alternative 1: No Project Alternative

The CEQA *Guidelines* require EIRs to include a “No Project Alternative” for the purpose of allowing decision makers to compare the effects of approving or denying a project altogether. Accordingly, Alternative 1 assumes that the development of the up to 500 MW PV solar facility with up to 600 MWh of energy storage capacity on the approximately 1,955-acre site would not occur. The No Project Alternative would not require general plan amendments, zone case changes, conditional use permits, or non-summary vacations of public access easements from Kern County, or a general plan amendment from California City for construction and operation of the proposed solar and energy storage project. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

1.7.4 Alternative 2: General Plan and Zoning Build-Out Alternative

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the Kern County General Plan, Fremont Interim Rural Community Plan, Kern County Zoning Ordinance, and California City General Plan and Zoning Ordinance. No project-related solar facilities would be developed under this alternative and, therefore, no zone changes for solar facility construction and operation would be required. A summary of these designations for the entire project site is provided below. A detailed description of the designations that apply to specific properties of the project or summaries by quadrant are provided in Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage*, and Table 3-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, provided in Chapter 3, *Project Description*.

- **Kern County – General Plan**
 - 4.2/5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit)
 - 8.5 (Resource Management, Min. 20 Acre Parcel Size)
- **Kern County – Zoning Ordinance**
 - A (Exclusive Agriculture)
 - A-1 (Limited Agriculture)
 - A-1 MH (Limited Agriculture, Mobile Home Combining)
 - PL RS (Platted Lands, Residential Suburban Combining)
 - PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)
- **California City – General Plan**
 - O/RA (Controlled Development & Open Space)
- **California City – Zoning Ordinance**
 - O/RA (Open Space/Residential Agricultural)

1.7.5 Alternative 3: Reduced Acreage Alternative

Alternative 3 would involve a reduced footprint of the total area proposed where solar development would occur, including the installation of solar panels, collector lines, transformers, substations, energy storage facilities, access roads, and O&M facilities. The purpose of the Reduced Acreage Alternative is to avoid or minimize adverse effects associated with the project's proximity to sensitive receptors, vegetation removal, ground disturbance, construction air emissions, and the extent project facilities would be visible from sensitive viewing locations. Reducing acreage of the project to achieve these goals can be achieved through a number of different footprint configurations. While a portion of the proposed project's environmental resource conditions and impacts are consolidated or based on the presence of fixed features (i.e., receptor locations), others are not consolidated (i.e., biological resources) in a manner that clearly indicates which portions of the project site could be eliminated to reduce the project's environmental effects across all parameters to the greatest extent possible. The Reduced Acreage Alternative targets an overall reduction of the project footprint by roughly 48 percent, which is intended to reduce impacts associated with project development roughly proportionally. A hypothetical reduced footprint configuration was developed for the Reduced Acreage Alternative that meets this reduction target, as discussed below; however, the County, acting within its role as CEQA lead agency when making its decision to approve or deny the project, may determine that a different footprint configuration would be more appropriate at reducing the project impacts. This could be based on considerations of operational feasibility and/or effectiveness, giving more weight to certain environmental objectives versus others, or possibly other considerations.

Under Alternative 3, the hypothetical footprint configuration for the Reduced Acreage Alternative, involves eliminating Sites 1, 3, 4, and 5 (1,018 acres), and retaining Site 2 (937 acres) for the development of a solar facility containing the same components as described for the proposed project (see Figure 6-1, *Reduced Acreage Alternative*). Eliminating Sites 1, 3, 4, and 5 would reduce the overall area where special-status species occurrences and suitable habitat was documented by roughly half when compared to the proposed project. Similarly, dust and equipment emissions would also be reduced by roughly half. The project and its associated impacts would also be consolidated to a single general area and adjacent to the California City Municipal Airport, opposed to dispersing them across a larger area, multiple sites, and in areas that are not adjacent to existing development. The Reduced Acreage Alternative would reduce the need for land use and zoning changes in both Kern County and the City of California City; however, the remaining portion of the project (Site 2) would still be located within Kern County and the City of California City. Therefore, land use and zoning changes would still be required for both jurisdictions. This alternative would also reduce impacts on aesthetics, hazards and hazardous materials, and wildfire due to the reduced area of disturbance, as compared to the project as proposed.

Based on the reduced area, the power generation would be reduced from approximately 500 MW to 240 MW, and energy storage capacities would be reduced roughly from approximately 600 MWh to 288 MWh. It is assumed that the same gen-tie alignment identified for the proposed project would be used for the Reduced Acreage Alternative (see Figure 6-1, *Reduced Acreage Alternative*). Similar to the proposed project, this alternative would also require the aforementioned amendment to the County General Plan Circulation Element, zone case changes, conditional use permits, and non-summary vacations of public access easement for construction and operation of a commercial solar electrical generating facility

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop On-site Solar Only, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kWh to 1 MW) within existing developed areas, typically on the rooftops and/or already disturbed parking lots of commercial and industrial facilities situated throughout Fremont Valley. 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 1,955 acres of total rooftop area) may be required to attain a similar generating capacity of 500 MW as compared to the proposed project. Because of space or capital cost constraints, many rooftop or ground-level 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 500 MW of power, but it would be for on-site use only. This alternative assumes that rooftop or parking area development would occur primarily on commercial and/or industrial structures and associated parking areas, due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on-site by the commercial or industrial facility without requiring the construction of new energy storage systems, electrical substations, or transmission facilities.

1.7.7 Environmentally Superior Alternative

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

The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources, and noise. Offsets of GHG emissions generated at fossil fuel-based electrical generating facilities would be reduced under this alternative due to the lower efficiency of the

distributed systems, which would not include solar tracking technology or up to 600 MWh of energy storage. 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, land use and planning, public services, transportation, tribal cultural resources, utilities and service systems, and wildfire hazards. Thus, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered 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 sites required to develop 500 MW of distributed solar generated electricity on building rooftops and the required land to support up to 600 MWh of energy storage. 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 and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

Table 1-6. Comparison of Alternatives

CEQA Issue Topic	Proposed Project Impacts	Alternative 1: No Project Alternative	Alternative 2: General Plan, and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (SU)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Less than significant with mitigation	Less (NI)	Less (NI)	Less (LTS)	Less (NI)
Air Quality	Significant and unavoidable (project and cumulative)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (NI)
Cultural Resources	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Energy	Less than significant	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)

Table 1-6. Comparison of Alternatives, continued

CEQA Issue Topic	Proposed Project Impacts	Alternative 1: No Project Alternative	Alternative 2: General Plan, and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Hazards and Hazardous Materials	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than significant (project) Less than significant with mitigation (cumulative)	Less (NI)	Less (NI)	Similar (LTS)	Less (NI)
Noise	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Greater (SU)	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)	Greater (SU)	Less (LTS)	Less (NI)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfire	Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	None	None	Some
Notes: ^a It was determined in the IS/NOP that no impacts would occur from project implementation with regard to the Mineral Resources, Recreation, and Population and Housing resource areas, and therefore, no further analysis was required in the EIR. NI = No impact LTS = Less than significant SU = Significant and unavoidable					

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 air quality
- Impacts related to biological resources
- Impacts related to hazards and hazardous materials
- Impacts to land use
- Impacts related to traffic

1.9 Issues to Be Resolved

Section 15123(b) (3) of the CEQA *Guidelines* 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;
- Identify the preferred choice among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified; and
- Determine whether additional mitigation measures need to be applied to the project.

1.10 Summary of Environmental Impacts and Mitigation Measures

Table 1-7, *Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County*, and Table 1-8, *Summary of Impacts, Mitigation Measures, and Levels of Significance – California City*, summarize the environmental impacts of the project, mitigation measures, and unavoidable significant impacts identified and analyzed in Sections 4.1 through 4.17 of this EIR. Refer to the appropriate EIR section for additional information.

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.1 Aesthetics			
Impact 4.1-1: The project would have a substantial adverse effect on a scenic vista.	Less than significant	No mitigation measures are 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 measures are required.	Less than significant
Impact 4.1-3: The project would 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.	Significant and unavoidable	<p>MM 4.1-1KC: Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities. b. The project proponent/operator shall erect signs with contact information for the project proponent/operator’s maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department. c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be 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. 	Significant and unavoidable

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.1-2KC: The project proponent 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 parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or 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 be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.</p> <p>MM 4.1-3KC: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.</p> <p>MM 4.1-4KC: Wherever possible, within the proposed project boundary, the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.</p> <p>a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) or allowed to revegetate with the existing native seed bank in the topsoil reestablish vegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used on-site; (2) a timeline for seeding the site; (3) the details of which areas are to be revegetated; (4) a list of the consultation efforts completed; (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations; and (6) a clear prohibition of the use of toxic rodenticides. c. During decommissioning and site restoration, ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish revegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. 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 revegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful, reevaluation 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 three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible. 	
<p>Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.</p>	<p>Potentially significant</p>	<p>MM 4.1-5KC: Prior to construction and prior to final activation of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the</p>	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.</p> <p>MM 4.1-6KC: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department for review and final approval.</p> <p>MM 4.1-7KC: Prior to final activation of the solar facility, the project operator shall demonstrate that the operations and maintenance building, energy storage facilities, and collector facilities utilize materials that minimize glare, as approved by the Kern County Planning and Natural Resources Department.</p>	
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.1-1KC through MM 4.1-7KC.	Significant and unavoidable
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: The project would conflict with existing zoning for agricultural use or a Williamson Act Contract.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.3 Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	Potentially significant	MM 4.3-1KC: The project operator shall ensure that construction, operation, and decommissioning of the proposed project shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. The project operator shall develop a fugitive dust control plan (Plan) for the project. The Plan shall address short-term construction and long-term operational activities. The Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to the start of any earthmoving activity. The project operator shall also develop a	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>decommissioning fugitive dust control plan (Decommissioning Plan) for the project if a decision is made to decommission and remove the solar facilities in the future. The Decommissioning Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to any decommissioning activities.</p> <p>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:</p> <p>a. The following dust control measures shall be implemented:</p> <ol style="list-style-type: none"> 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 three times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative. 2. All disturbed areas on the project site and proposed transmission corridor shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods. The frequency of watering can be reduced or eliminated during period of precipitation. 3. All unpaved construction and operation/maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent. 4. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures or neighboring property, or as identified in a plan approved by the Eastern Kern Air Pollution Control District. 5. All trucks entering or leaving the project site shall cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of six inches. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> 6. Areas disturbed by clearing, earth-moving, or excavation activities shall be minimized at all times. 7. Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust. 8. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds. 9. Prior to construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed where appropriate. 10. 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. After clearing, grading, earth-moving and/or excavating is completed within any portion of the project site, the following dust control practices shall be implemented during site construction: <ul style="list-style-type: none"> 1. Once initial leveling has ceased, all inactive soil areas within the construction site shall be immediately treated with a dust palliative. 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. 3. All unpaved road areas shall be treated with a dust palliative or graveled to prevent excessive dust. c. During all phases of construction, the following vehicular control measures shall be implemented: <ul style="list-style-type: none"> 1. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. 2. Visible speed limit signs shall be posted at the project site entrance(s). 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>3. All areas with vehicle traffic, especially the main entrance roadway to the project site, shall be graveled or treated with dust palliatives so as to prevent track-out onto public roadways.</p> <p>4. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.</p> <p>5. Streets adjacent to the project site shall be kept clean and project related accumulated silt shall be removed on a regular basis. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited.</p> <p>6. Access to the project site shall be by means of an apron into the facility site from adjoining surfaced roadways. The apron 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 facility site, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.</p> <p>MM 4.3-2KC: The project operator and/or its contractor(s) shall implement the following measures during construction of the proposed project on the project site:</p> <p>a. All equipment shall be maintained in accordance with the manufacturer’s specifications.</p> <p>b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.</p> <p>c. No individual piece of construction equipment shall operate longer than eight cumulative hours per day.</p> <p>d. Electric equipment shall be used whenever feasible in lieu of diesel or gasoline-powered equipment.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>e. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO_x emissions.</p> <p>f. On-road and off-road diesel equipment shall use diesel particulate filters if permitted under manufacturer’s guidelines.</p> <p>MM 4.3-3KC: The project operator shall continuously comply with the following measures during construction and operation to control NO_x emissions from on-road heavy-duty diesel haul vehicles that are contracted on a continuing basis for use to haul equipment and materials for the proposed project:</p> <p>a. 2006 engines or pre-2006 engines with California Air Resources Board-certified Level 3 diesel emission controls will be used to the extent possible.</p> <p>b. All on-road construction vehicles, except those meeting the 2006/California Air Resources Board certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards to the greatest extent possible. This does not apply to worker personal vehicles.</p> <p>c. The construction contractor shall ensure that all on-road construction vehicles are properly tuned and maintained in accordance with the manufacturer’s specifications.</p> <p>MM 4.3-4KC: The project operator shall continuously comply with the following measures during operation to control fugitive dust emissions:</p> <p>a. The unpaved main access road for employees and deliveries to the maintenance complex 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 California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.</p> <p>b. The other unpaved roads at the project site shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes.</p> <p>c. Traffic speeds on unpaved roads shall be limited to no more than 10 miles per hour, with the exception that vehicles may travel up to 25</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s) from the central maintenance complex.</p>	
<p>Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.</p>	<p>Significant and unavoidable</p>	<p>Implement Mitigation Measures MM 4.3-1KC through MM 4.3-4KC.</p> <p>MM 4.3-5KC: At the time of project implementation, the Kern County Public Health Services Department shall determine if the COVID-19 pandemic is still present at a level where spread to sensitive receptors could occur. If determined necessary by the Kern County Public Health Services Department, a COVID-19 Health and Safety Plan shall be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.</p> <p>MM 4.3-6KC: Prior to ground disturbance activities, the project proponent shall provide a “Valley Fever Training Information Packet” and conduct training sessions for all construction personnel. A copy of the handout and a schedule of education sessions shall be provided to the Kern County Planning and Natural Resources Department. All evidence of the training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural Resources Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. 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:</p> <ol style="list-style-type: none"> a. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session. b. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; systems of exposure; and instructions for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent symptoms lasting more than three days shall be recommended to seek immediate medical advice. 	<p>Significant and unavoidable</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>c. Training on methods that may help prevent Valley Fever infection.</p> <p>d. 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. Though the use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to the Kern County Planning and Natural Resources Department. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.</p> <p>MM 4.3-7KC: Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.</p>	
<p>Impact 4.3-3: The project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.</p>	<p>Less than significant</p>	<p>No mitigation measures are required.</p>	<p>Less than significant</p>
<p>Impact 4.3-4: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.</p>	<p>Significant and unavoidable</p>	<p>Implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC.</p>	<p>Significant and unavoidable</p>
<p>Cumulative Impacts</p>	<p>Significant and unavoidable</p>	<p>Implement Mitigation Measures MM 4.3-1KC through MM 4.3-7KC.</p>	<p>Significant and unavoidable</p>
<p>4.4 Biological Resources</p>			
<p>Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measure MM 4.1-5KC (see Section 4.1, <i>Aesthetics</i>, for full Mitigation Measure text), regarding compliance with the Kern County Dark Skies Ordinance.</p> <p>MM 4.4-1KC: Prior to the issuance of grading or building permits, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by California Department of Fish and Wildlife to oversee compliance with protection measures for all listed and</p>	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>other special-status species. The Lead Biologist shall be on-site during all fencing and ground disturbance activities throughout the construction phase. The project Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures described herein. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The project Lead Biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.</p> <p>MM 4.4-2KC: Prior to the issuance of grading or building permits, and for the duration of construction activities, all new construction workers at the project site shall attend a Worker Environmental Awareness Program, developed and presented by the project Lead Biologist. As part of the Worker Environmental Awareness Program training, the project Lead Biologist shall perform the following training-related tasks:</p> <ol style="list-style-type: none"> a. Provide the training materials for Worker Environmental Awareness Program training. These materials shall include the measures and mitigation requirements for protected plant and wildlife species (e.g., avoidance and buffer requirements, nighttime construction limitations), and applicable fire protection measures. Worker Environmental Awareness Program training shall also include driver training to avoid and minimize collision risks with protected species, and reporting protocols in the event that any dead or injured wildlife are discovered. b. Send a copy of all Worker Environmental Awareness Program training materials to the Kern County Planning and Natural Resources Department. c. Maintain a list on-site of all employees who have undergone Worker Environmental Awareness Program training. A copy of this list shall be provided to the Kern County Planning and Natural Resources Department as necessary. <p>MM 4.4-3KC: The Worker Environmental Awareness Program shall be presented by the Lead Biologist and shall include information on the life history of each federal and state-listed species, as well as other special-status wildlife, natural communities, and plant species that may be</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>encountered during construction activities, their legal protections, the definition of “take” under the federal and state Endangered Species Acts, measures the project operator is implementing to protect special-status species, reporting requirements, specific measures that each worker shall employ to avoid take of special-status wildlife species, and penalties for violation of the acts. Training shall be documented as follows:</p> <ol style="list-style-type: none"> a. An acknowledgement form signed by each worker indicating that environmental training has been completed. b. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are in possession of hard hats with the required sticker. c. A copy of the training transcript/training video and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgements forms shall be submitted to the Kern County Planning and Natural Resources Department. <p>MM 4.4-4KC: During construction and decommissioning the anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with stakes and flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. The construction crews and contractor(s) shall be held responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits.</p> <p>MM 4.4-5KC: New and existing roads that are planned for either construction or widening shall not extend beyond the planned impact area. All vehicles passing or turning around shall do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, a biological resources survey shall be conducted by the Lead Biologist or by biological monitor(s) under the Lead Biologist’s supervision to determine if listed or special-status</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>species would be impacted. Impacts shall be avoided to the maximum extent practicable or shall be fully mitigated for. Construction shall not begin until the route is cleared for biological resources. The route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction and use.</p> <p>MM 4.4-6KC: Spoils shall be stockpiled in areas disturbed by the project. Stockpile areas shall be marked to define the limits where stockpiling can occur. Standard best management practices shall be employed to prevent loss of habitat due to erosion caused by project-related impacts (i.e., grading or clearing for new roads). All detected erosion shall be remedied within two days of discovery.</p> <p>MM 4.4-7KC: All ground disturbing construction and decommissioning activities shall be monitored by the qualified Lead Biologist or by biological monitors under the Lead Biologist’s supervision to ensure compliance with avoidance and minimization measures.</p> <p>MM 4.4-8KC: During construction and decommissioning the project operator and/or contractor shall implement the following general avoidance and protective measures:</p> <ol style="list-style-type: none"> a. Prior to issuance of grading or building permits but after consulting with the United States Fish and Wildlife Service and California Department of Fish and Wildlife, the solar facility project site (east of State Route 14 for the Kudu solar site) shall be fenced with a permanent desert tortoise exclusion fence to keep any desert tortoises that may be using habitat adjacent to the facility from entering during construction, operations and maintenance, and dismantling and restoration (decommissioning) phases. The project proponent shall submit a fencing plan that outlines the location, type of fence, and construction methods to United States Fish and Wildlife Service and California Department of Fish and Wildlife for review. Desert tortoise-proof gates or guards shall be established at all photovoltaic solar facility entry points, unless otherwise approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife. Workers installing the exclusion fencing shall have undergone the worker training program mandated in Mitigation Measure MM 4.4- 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>2KC and a biological monitor under the authority of the project Lead Biologist shall be present during exclusion fencing installation.</p> <p>b. The fencing shall be routinely inspected with inspections after precipitation events of more than 1 inch at each ephemeral drainage crossing. Any damage to the fencing shall be repaired immediately or no later than 2 days following the observation.</p> <p>c. Following the construction of desert tortoise exclusion fencing around the solar facility perimeters, clearance surveys shall be conducted by the Lead Biologist to ensure that no desert tortoises, Mohave ground squirrels, or other listed wildlife species are trapped within the fenced area. The Lead Biologist may be assisted by biological monitors under the supervision of the Lead Biologist. The clearance surveys shall be conducted no more than 30 days prior to ground disturbing activities associated with construction, operations and maintenance, or decommissioning. Clearance surveys shall adhere to the current United States Fish and Wildlife Service clearance survey protocols described in the Desert Tortoise Field Manual, including a minimum of two clearance passes to be completed after desert tortoise-proof fencing is installed, which shall coincide with heightened desert tortoise activity from late March through May and September through October or as outlined in the project’s Habitat Conservation Plan or Incidental Take Permit. The Designated Biologist(s) shall perform pre activity surveys for desert tortoise and shall remain on-site daily until the construction period ends or exclusion fencing has been installed to preclude desert tortoises from entering a given work area (work area is completely enclosed with exclusionary fence). The Designated Biologist will remain available even after the fence is installed and be called to the site if a tortoise or Mohave ground squirrel is found inside the fence, emphasizing in the tortoise awareness program that only agency authorized biologists, not construction workers, are allowed to handle tortoises. The Designated Biologist shall monitor the exclusionary fence on a weekly basis after its installation to ensure its integrity and function are maintained until the end of construction. United States Fish and Wildlife Service and California Department of Fish and Wildlife may impose modified or additional fencing requirements in</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>the project’s final 2081 Permit and/or Habitat Conservation Plan, if required.</p> <p>d. If a desert tortoise or Mohave ground squirrel is found on the site during project construction, operation, or decommissioning, activity shall cease in the vicinity of the animal and the desert tortoise and/or Mohave ground squirrel shall be passively restricted to the area encompassing its observed position on the construction site and its point of entry shall be determined if possible. The Lead Biologist shall install a temporary tortoise-proof fence around this area. Concurrent with this effort, United States Fish and Wildlife Service and California Department of Fish and Game shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the desert tortoise and/or Mohave ground squirrel is observed leaving the site, work in the area can resume. A report shall be prepared by the Lead Biologist to document the activities of the desert tortoise and/or Mohave ground squirrel within the site; all fence construction, modification, and repair efforts; and movements of the desert tortoise and/or Mohave ground squirrel once again outside the permanent desert tortoise-proof fence. This report shall be submitted to wildlife and resource agency representatives, the Kern County Planning and Natural Resources Department. If passive relocation is not possible, desert tortoise and/or Mohave ground squirrel may also be translocated in accordance with a United States Fish and Wildlife Service and/or California Department of Fish and Wildlife approved Translocation Plan.</p> <p>e. Outside permanently fenced desert tortoise exclusion areas where desert tortoise may be present, the project operator shall limit the areas of disturbance in desert tortoise and Mohave ground squirrel habitat. Parking areas, new roads, pulling sites, and locations for staging, storage, excavation, and disposal shall be confined to the smallest areas possible. These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.</p> <p>f. The Lead Biologist or biological monitor shall monitor any ground-disturbance activities that occur where desert tortoise may be present outside the desert tortoise exclusion fencing. Work outside areas with</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>desert tortoise exclusion fencing shall only occur during daylight hours where desert tortoise are determined to be present.</p> <p>MM 4.4-9KC: The project operator and/or contractor shall implement the following during project decommissioning:</p> <ul style="list-style-type: none"> a. All applicable construction phase general protection measures shall be implemented during decommissioning. b. A 15-mile-per-hour speed limit on paved or stabilized unpaved roads shall be applied for travel during decommissioning activities. Travel shall be confined to existing roads and previously disturbed areas. c. If any special-status wildlife is detected in the work area during decommissioning activities, no work shall be conducted until the individual moves on its own outside of the work area. d. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours. <p>MM 4.4-10KC: During construction the project operator and/or contractor shall implement the following general avoidance and protective measures:</p> <ul style="list-style-type: none"> a. The Lead Biologist or biological monitor shall monitor all ground-disturbance activities. Work shall only occur during daylight hours as practicable. Specialized testing activities and/or continuous operations (i.e., well drilling) may be conducted at night when necessary. Prior to conducting vegetation removal or grading activities inside the fenced area, a Lead Biologist or biological monitor under the supervision of a Lead Biologist shall survey the area immediately prior to conducting these activities to ensure that no listed or special-status animals or plants are present. The project Lead Biologist shall have the right to halt all activities that are in violation of the special species protection measures. Work shall proceed only after hazards to special species are removed and the species is no longer at risk. The project biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> b. At the end of each work day, the Lead Biologist or Qualified Biologist shall ensure that all trenches, bores, and other excavations outside the permanently fenced area in suitable habitat for desert tortoise have been inspected for the presence of desert tortoise and backfilled, if no tortoise is present. If backfilling is not feasible, these excavations shall be modified to ensure that they cannot potentially entrap desert tortoises (e.g., equipped with desert tortoise escape ramps, covered to prevent desert tortoise access, enclosed with a desert tortoise exclusion fence). All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of four inches or greater shall be thoroughly inspected for listed and special-status wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status animal is discovered inside a pipe that section of pipe shall not be moved until the animal has moved off on its own. If the animal does not move in a timely manner, then the appropriate resource agency shall be consulted. c. Any construction pipe, culvert, or similar structure stored within desert tortoise habitat (i.e., outside areas with desert tortoise exclusion fencing) shall be inspected for desert tortoise before the material is moved, buried, or installed. d. Water used for dust abatement shall be minimized, as allowed by Kern County Engineering, Surveying, and Permit Services Department, or managed in such a manner as to prevent the formation of puddles that could attract common ravens, predators, and other wildlife species to or near the site. e. No vehicle or equipment parked outside the fenced areas shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of desert tortoise. If present, the desert tortoise shall be left to move on its own. f. Vehicular traffic to and from the project site shall use existing routes of travel (e.g., State Route 14). Cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicle speeds within the project site shall not exceed 25 miles per hour on roads within desert tortoise habitat. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>g. All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Lead Biologist shall be informed of any hazardous spills immediately and hazardous spills shall be cleaned up as soon as practical and the contaminated soil shall be properly disposed of at a licensed facility. <li>h. A long-term trash abatement program shall be established for construction, operations, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. <li>i. Workers shall be prohibited from bringing pets and firearms to the project and from feeding wildlife. <li>j. Intentional killing or collection of wildlife species, including both listed species and non-listed species, in the project site and surrounding areas shall be prohibited. The Lead Biologist, wildlife and resource agency representatives, and Kern County Planning and Natural Resources Department shall be notified of any such occurrences within 24 hours. <li>k. Construction monitoring shall be conducted by either the Lead Biologist or by biological monitors under the Lead Biologist’s supervision. The biological monitors shall have experience in monitoring for special-status wildlife. <li>l. During construction, daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report for the wildlife and resource agencies and Kern County Planning and Natural Resources Department on a monthly basis, documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall biological resources-related activities conducted, including the worker awareness training, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.4-11KC: The introduction of exotic plant species shall be avoided and controlled wherever possible and may be achieved through physical or chemical removal and prevention. Preventing exotic plants from entering the site via vehicular sources shall include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming and going from the site. Earthmoving equipment shall be cleaned prior to transport to the project site. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means</p> <p>MM 4.4-12KC: Prior to construction, the project operator and/or contractor shall retain a qualified biologist or botanist to conduct preconstruction rare plant surveys(s) in areas identified as potentially suitable habitat for Barstow woolly sunflower and/or Mojave spineflower within the Kudu project site during the appropriate blooming period in accordance with the guidelines established by the California Department of Fish and Wildlife. If Barstow woolly sunflower and/or Mojave spineflower is not observed during the survey, no further action is required.</p> <p>a. If Barstow woolly sunflower and/or Mojave spineflower is observed within the project footprint during preconstruction surveys, the qualified biologist/botanist shall delay ground-disturbing activities, mark or fence the population(s) identified for avoidance, and contact California Department of Fish and Wildlife for consultation. The proposed project shall be designed by the Lead Biologist, to reduce impacts to the species through the establishment of preservation areas and buffers. If avoidance or minimization measures are implemented on-site, a Habitat Mitigation Plan shall be developed to ensure adequate management and conservation of botanical resources on-site over the long term. A copy of the Habitat Mitigation Plan shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>b. If Barstow woolly sunflower and/or Mojave spineflower is detected during preconstruction surveys, and impacts cannot be avoided, the Habitat Mitigation Plan would also include the following:</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ol style="list-style-type: none"> 1. A figure illustrating the area of the population(s) to be preserved, and the area of the population(s) to be removed; 2. Identification of on-site or off-site preservation, restoration, or enhancement location(s); 3. Methods for preservation, restoration, enhancement, and/or population translocation; 4. A replacement ratio and success standard of 1:1 for occupied habitat(s) lost unless a lower mitigation ratio and/or alternative mitigation is agreed to in coordination with California Department of Fish and Wildlife; 5. A five-year monitoring program to ensure mitigation success; 6. Adaptive management and remedial measures in the event that performance standards are not achieved; and 7. Financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity. <p>MM 4.4-13KC: Prior to the issuance of grading or building permits, the project operator shall:</p> <ol style="list-style-type: none"> a. Provide evidence to the Kern County Planning and Natural Resources Department that consultation with the Kern County Agricultural Commissioner has taken place regarding removal of plants protected under the California Desert Native Plant Act; b. If the Agricultural Commissioner determines that a permit is not required, the project operator shall provide a letter describing the consultation process and Agricultural Commissioner’s determinations, indicating that such authorization is not required. The letter shall also identify the Agricultural Commissioner’s points of contact and contact information; c. If required by the Agricultural Commissioner, the project operator shall provide evidence to the Kern County Planning and Natural Resources 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Department that a California Desert Native Plant Act removal permit has been obtained.</p> <p>MM 4.4-14KC: The following measures shall be implemented to reduce direct impacts to sensitive natural communities. To the extent feasible, the following avoidance and minimization measures shall be implemented:</p> <ul style="list-style-type: none"> a. Where feasible, the project shall be designed to avoid disturbance of Creosote Bush – White Bursage – Desert Senna Scrub (<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Senna armata</i>) Association. b. Where it is not feasible to avoid direct impacts to sensitive natural communities, the project operator shall implement the following measures: <ul style="list-style-type: none"> 1. Compensatory mitigation for impacts to sensitive natural communities shall occur either on-site or off-site and would occur at a ratio no less than 1:1 for each Sensitive Natural Community impacted. A Habitat Mitigation and Monitoring Plan shall be prepared or the impacts to sensitive natural communities shall be addressed in the Project’s Incidental Take Permit or Lake and Streambed Alteration Agreement during a coordination with the California Department of Fish and Wildlife. 2. If on-site mitigation is proposed, the Habitat Mitigation and Monitoring Plan shall identify those portions of the site that contain suitable characteristics for restoration or enhancement of sensitive habitat. Determination of mitigation adequacy shall be based on comparison of the restored or enhanced habitat with similar, undisturbed habitat in the vicinity of the development site. If mitigation is implemented off-site, compensatory lands shall contain similar or more well-developed habitat and preferably be located in the vicinity of the site or watershed. Off-site land shall be preserved through a conservation easement and the Plan shall identify an approach for funding assurance for the long-term management of the compensatory land. c. Where direct impacts to western Joshua trees are unavoidable, if western Joshua tree is listed as a ‘candidate,’ ‘threatened,’ or ‘endangered’ species under the California Endangered Species Act at the time of issuance of a building or grading permit in areas that would 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>involve the removal of western Joshua trees, the project proponent may pursue one of the following mitigation options:</p> <ol style="list-style-type: none"> 1. The project operator shall provide evidence to the Kern County Planning and Natural Resources Department demonstrating that that impacts to western Joshua tree have been mitigated in accordance with Section 2084 of the California Fish and Game Code; or 2. The project operator shall mitigate for permanent impacts to western Joshua tree, should an Incidental Take Permit be required from California Department of Fish and Wildlife, through an approved mitigation bank, in-lieu fee program, or other California Department of Fish and Wildlife-approved process. Compensatory mitigation for permanent impacts to western Joshua tree shall be determined and acquired in consultation with the wildlife or resource agency. Verification of compliance shall be submitted to the Kern County Planning and Natural Resources prior to project construction in areas that would involve removal of western Joshua trees. <p>MM 4.4-15KC: The measures listed below shall be implemented prior to and during construction, operations, and decommissioning at the project site.</p> <ol style="list-style-type: none"> a. The project operator has filed for an Incidental Take Permit for Mohave ground squirrel and desert tortoise with California Department of Fish and Wildlife, and a Habitat Conservation Plan with the United States Fish and Wildlife Service for desert tortoise. The project proponent shall mitigate for permanent impacts to suitable desert tortoise and Mohave ground squirrel habitat, through an approved mitigation bank, in-lieu fee program, or other mechanism accepted by California Department of Fish and Wildlife and/or United States Fish and Wildlife Service, as outlined in each agencies respective permit. Compensatory mitigation acreage for permanent impacts to western burrowing owl nesting, occupied, and satellite burrows and/or western burrowing owl habitat shall be determined and acquired in consultation with the wildlife or resource agency and may be mitigated alongside impact on covered species. Compensatory mitigation would provide habitat for desert tortoise, Mohave ground squirrel, as well as rare plants and State Waters (only if impacted by 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>the project). Verification of compliance shall be submitted to the Kern County Planning and Natural Resources Department prior to the onset of activities that have the potential to impact covered species.</p> <p>b. Prepare a Habitat Mitigation and Monitoring Plan (if required, should an incidental take permit be required for the project) or provide a copy of the project’s incidental take permit that outlines all project compensatory mitigation for desert tortoise and Mohave ground squirrel, in coordination with the California Department of Fish and Wildlife.</p> <ol style="list-style-type: none"> 1. Compensatory mitigation shall provide ecological benefits to covered species that are similar to or better than the project’s impacts on covered species. Mitigation sites in the vicinity of the project site are preferable. 2. Mitigation shall meet California Department of Fish and Wildlife’s durability requirements. 3. The plan, or Interim Take Permit, shall identify conservation actions, where applicable, to demonstrate that the compensatory lands are managed to provide durable environmental benefits to the covered species. 4. The plan, or Incidental Take Permit, shall identify an approach for funding assurance for the long-term management of the conserved land. <p>MM 4.4-16KC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.</p> <p>a. A project Lead Biologist shall be on-site during all construction activities in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows not more than 14 days prior to ground disturbance and/or prior to desert tortoise exclusion fencing installation. The survey methodology shall be consistent with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls (and may be combined with other pre-construction surveys). As burrows are searched, biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department.</p> <p>b. If no burrowing owls are detected, no further mitigation is necessary. If burrowing owls are detected, no ground-disturbing activities, such as road construction or installation of solar arrays or ancillary facilities, shall be permitted within the distances specified in Table 2 of the Staff Report from an active burrow during the nesting and fledging seasons (April 1 to August 15 and August 16 to October 15, respectively), unless otherwise authorized by California Department of Fish and Wildlife. The specified buffer distance ranges from 656 feet to 1,640 feet, according to the time of year and the level of disturbance. Buffers shall be established in accordance with the table provided in Table 4.4-6, <i>Burrowing Owl Burrow Buffers</i>, below, and occupied burrows shall not be disturbed during the nesting season unless a qualified biologist approved by California Department of Fish and Wildlife, verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season (April 1 to October 15) or as outlined in the project’s Habitat Conservation Plan or Incidental Take Permit.</p> <p>c. During the nonbreeding (winter) season (October 16 to March 31), consistent with the table below (<i>Burrowing Owl Burrow Buffers</i>), all ground-disturbing work shall maintain a distance ranging from 164 feet to 1,640 feet from any active burrows depending on the level of disturbance. If active winter burrows are found that would be directly affected by ground-disturbing activities, owls can be displaced from winter burrows according to recommendations made in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012).</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation																							
		<p style="text-align: center;">Table 4.4-6. Burrowing Owl Burrow Buffers</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Location</th> <th rowspan="2" style="text-align: center;">Time of Year</th> <th colspan="3" style="text-align: center;">Level of Disturbance (in feet)</th> </tr> <tr> <th style="text-align: center;">Low</th> <th style="text-align: center;">Medium</th> <th style="text-align: center;">High</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Nesting Sites</td> <td style="text-align: center;">April 1 - Aug 15</td> <td style="text-align: center;">656</td> <td style="text-align: center;">1,640</td> <td style="text-align: center;">1,640</td> </tr> <tr> <td style="text-align: center;">Nesting Sites</td> <td style="text-align: center;">Aug 16 - Oct 15</td> <td style="text-align: center;">656</td> <td style="text-align: center;">656</td> <td style="text-align: center;">1,640</td> </tr> <tr> <td style="text-align: center;">Any occupied burrow</td> <td style="text-align: center;">Oct 16 - Mar 31</td> <td style="text-align: center;">164</td> <td style="text-align: center;">328</td> <td style="text-align: center;">1,640</td> </tr> </tbody> </table> <p style="text-align: center;">Source: California Department of Fish and Game</p> <p>d. Burrowing owls should not be excluded from burrows unless or until a Burrowing Owl Exclusion Plan is developed by the Lead Biologist and approved by the applicable local California Department of Fish and Wildlife office and submitted to the Kern County Planning and Natural Resources Department. The plan shall include, at a minimum:</p> <ol style="list-style-type: none"> 1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping; 2. Type of scope to be used and appropriate timing of scoping to avoid impacts; 3. Occupancy factors to look for and what shall guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door). 4. How the burrow(s) shall be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to 	Location	Time of Year	Level of Disturbance (in feet)			Low	Medium	High	Nesting Sites	April 1 - Aug 15	656	1,640	1,640	Nesting Sites	Aug 16 - Oct 15	656	656	1,640	Any occupied burrow	Oct 16 - Mar 31	164	328	1,640	
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Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);</p> <ol style="list-style-type: none"> 5. Removal of other potential owl burrow surrogates or refugia on-site; 6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency; 7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take; 8. How the impacted site shall continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete. 9. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion shall occur immediately after the end of the breeding season. 10. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight). <p>e. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or heavy material shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation.</p> <p>f. During construction and decommissioning activities, monthly and final compliance reports shall be provided to California Department of Fish and Wildlife, the Kern County Planning and Natural Resources Department, and other applicable resource agencies documenting the</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.</p> <p>MM 4.4-17KC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.</p> <p>a. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented off-site in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) and in consultation with California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented:</p> <ol style="list-style-type: none"> 1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including de-compacting soil and revegetating. 2. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include: Permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. 3. Permanently protect or enhance mitigation land through coordination with California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits. <p>b. Develop and implement a mitigation land management plan in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ol style="list-style-type: none"> 1. Fund the maintenance, management, preservation, or enhancement of mitigation land. 2. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed. 3. Mitigation lands or California Department of Fish and Wildlife-approved habitat enhancement projects should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present. 4. Consult with the California Department of Fish and Wildlife when determining off-site mitigation. <p>MM 4.4-18KC: Prior to the issuance of grading or building permits the following shall be implemented:</p> <ol style="list-style-type: none"> a. Preconstruction surveys shall be conducted by a qualified biologist for the presence of desert kit fox and American badger dens prior to installation of desert tortoise exclusion fencing. Copies of the completed surveys shall be submitted to Kern County Planning and Natural Resources Department. b. The survey shall be conducted in areas of suitable habitat for American badger and desert kit fox, which includes fallow agricultural land and scrub habitats. Surveys shall not be conducted for all areas of suitable habitat at one time; they shall be phased so that surveys occur within two weeks prior to disturbance of that portion of the project site. If no potential American badger or desert kit fox dens are present, no further mitigation is required. c. If potential dens are observed, the following measures are required to avoid potential adverse effects to American badger and desert kit fox: <ol style="list-style-type: none"> 1. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers or foxes from reuse during construction. Den excavation shall be prohibited during the 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>pupping season to avoid possible pup mortality resulting from a lack of available refugia.</p> <ol style="list-style-type: none"> 2. Passive relocation shall be prohibited during the pupping season, which is February 15 to June 1 for both species. If the qualified biologist determines that potential dens outside the breeding season may be active, the biologist shall notify the California Department of Fish and Wildlife. Entrances to the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers and foxes have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent reuse during construction. The collapsing of active desert kit fox dens shall not occur without prior consultation with the California Department of Fish and Wildlife. A biologist shall remain on-call throughout construction in the event that badger or desert kit fox are present on the site. 3. Construction activities shall not occur within 50 feet of active badger dens. The project operator shall contact California Department of Fish and Wildlife immediately if natal badger dens are detected to determine suitable buffers and other measures to avoid take. 4. Construction activities shall not occur within 100 feet of active kit fox dens. The project operator shall contact California Department of Fish and Wildlife immediately if pupping kit fox dens are detected to determine suitable buffers and other measures to avoid take. <p>MM 4.4-19KC: Not more than 14 days prior to site clearing and/or ground disturbance in a given area, a qualified biologist shall conduct a preconstruction avian nesting survey. Copies of the completed surveys shall be submitted to Kern County Planning and Natural Resources Department. The surveys shall be conducted as follows:</p> <ol style="list-style-type: none"> a. Surveys shall not be conducted for an entire project site at one time; they shall be phased so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site—this includes ground-nesting species (e.g., burrowing owl).</p> <p>b. If construction is scheduled to occur during the non-nesting season (August 2 to January 31), no preconstruction surveys for birds or additional measures are required.</p> <p>c. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 14 days or more in construction activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again.</p> <p>d. If active nests are found a 250-foot, no-disturbance buffer (or as otherwise determined in consultation with California Department of Fish and Wildlife) shall be created around the active nests. If the nest(s) are found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified wildlife biologist has determined that the birds have fledged or by relocating the project component(s) to avoid the area.</p> <p>e. All vertical tubes used in project construction, such as solar mounts and chain link fencing poles shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of special-status birds.</p> <p>MM 4.4-20KC: Prior to issuance of a grading or building permit, the project operator shall submit written documentation to the Kern County Planning and Natural Resources Department verifying that all power lines are designed in accordance with Avian Power Line Interaction Committee Guidelines. The project operator shall conform to the latest practices (as outlined in the Avian Power Line Interaction Committee Guidelines document) to protect birds from electrocution and collision.</p> <p>MM 4.4-21KC: The project operator shall develop a site-specific Common Raven Management Plan in accordance with United States Fish and Wildlife Service guidelines and shall implement management measures for ravens in the project area. These measures may include but are not limited to designing structures to eliminate perches, waste management, road kill management, management of ponded water during construction and</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		operations, and nest removal on structures within the photovoltaic solar facility site and along the transmission line.	
<p>Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS.</p>	Potentially significant	<p>Implement Mitigation Measure MM 4.4-14KC.</p> <p>MM 4.4-22KC: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided to the extent practicable and shall be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board the Kern County Planning and Natural Resources Department. The report shall include information as shown below as a plan as necessary and shall outline compliance to the following:</p> <ul style="list-style-type: none"> a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided to the extent practicable. This may be shown in plan form. b. Any material/spoils from project activities should be located away from jurisdictional areas. Jurisdictional areas shall be protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and/or straw bale barriers, as appropriate. Protection measures shall follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan and in the Hazardous Materials Business Plan. c. Prior to the start of construction activities, the project proponent/operator shall provide evidence that all fueling, hazardous materials storage areas, and operations and maintenance activities shall be sited at least 100 feet away from on-site drainages and other water features, as identified in the project-specific delineation of wetlands and waters. d. Any spillage of hazardous material shall be stopped if it can be done safely. The contaminated area shall be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified. <p>MM 4.4-23KC: If it is determined during final siting that jurisdictional ephemeral drainages cannot be avoided, the project proponent shall notify the California Department of Fish and Wildlife of potentially jurisdictional features and, if necessary, obtain a Lake and Streambed Alteration Agreement. If waters of the State are impacted, the owner/operator shall notify the Lahontan Regional Water Quality Control Board, and obtain a</p>	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Waste Discharge Requirement pursuant to the California Porter-Cologne Act, if required.	
Impact 4.4-3: The project would have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than significant	Implement Mitigation Measures MM 4.4-22KC and MM 4.4-23KC.	Less than significant
Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially significant	Implement Mitigation Measure MM 4.1-5KC (see Section 4.1, <i>Aesthetics</i> , for full mitigation measure text) and Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, and MM 4.4-19KC through MM 4.4-21KC.	Less than significant
Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially significant	Implement Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, and MM 4.4-9KC through MM 4.4-14KC.	Less than significant
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.1-5KC (see Section 4.1, <i>Aesthetics</i> , for full mitigation measure text), MM 4.4-1KC through MM 4.4-23KC.	Significant and unavoidable
4.5 Cultural Resources			
Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historic or an archaeological resource, as defined in CEQA Guidelines Section 15064.5.	Potentially significant	MM 4.5-1KC: Prior to issuance of grading permits, the project proponent/operator shall: <ul style="list-style-type: none"> a. Retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards as published in Title 36, Code of Federal Regulations, part 61 (36 CFR Part 61) to carry out all Mitigation Measures related to archaeological and historical resources. b. The services of a qualified archaeological monitor and Native American monitor shall be retained by the project proponent/operator to monitor all ground-disturbing activities associated with the construction of the proposed project. The Native American monitor shall be selected from a list of Native American contacts with traditional ties to the project area, provided by the Native American 	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Heritage Commission and/or consultation with Native American tribal groups who may have interest in the project area. The archaeological monitor shall work under the supervision of the qualified archaeologist.</p> <p>c. The qualified archaeologist, archaeological monitor and Native American monitor shall be provided all project documentation related to cultural resources prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the qualified archaeologist, archaeological monitor and Native American monitor.</p> <p>MM 4.5-2KC: Prior to the issuance of grading or building permits, and for the duration of construction activities, a Construction Worker Environmental and Cultural Awareness Training Program shall be provided to all new construction workers within one week of employment at the project site, laydown area and/or transmission routes. The training shall be prepared and conducted by the qualified archaeologist and may include participation of the Native American monitor. The training may be in video format. The qualified archaeologist shall be available to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must resume when construction activities resume. The training shall include, but not be limited to:</p> <ul style="list-style-type: none"> a. A discussion of applicable cultural resources statues, regulations and related enforcement provisions; b. An overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups, provided by the Native American monitor or tribal leader; c. A summary of the effects of the proposed project on cultural resources; d. Samples or visuals of artifacts that might be found in the project area; e. A discussion of what such artifacts may look like when partially or totally buried and then freshly exposed; f. A discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during construction; 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>g. Instruction that in the event cultural resources are unearthed during ground-disturbing activities, the qualified archaeologist, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the site until the qualified archaeologist has evaluated the find, determined whether the find is culturally sensitive, and designs an appropriate short-term and long term treatment plan. The qualified archaeologist, in consultation with the Planning and Natural Resources Department and Native American monitor shall establish an appropriate protocols and procedures for minimizing impacts during construction and future impacts during project operation and maintenance;</p> <p>h. An informational guide that identifies the reporting procedures in the event of a discovery;</p> <p>i. Other information as deemed necessary by the qualified archaeologist or Native American monitor;</p> <p>j. An acknowledgement form signed by each working indicating that environmental/ cultural training has been completed.</p> <p>k. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental/ cultural training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are wearing hard hats with the required sticker;</p> <p>l. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>MM 4.5-3KC: In the event archaeological materials are encountered during the course of grading or construction for any construction components, the project contractor shall cease any ground-disturbing activities within 100 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 100-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 qualified archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes,</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>including but not limited to prehistoric archaeological sites or tribal cultural resources. The qualified archaeologist in consultation with the Native American monitor, if appropriate, 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.</p> <p>Per California Environmental Quality Act Guidelines (CEQA) 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 Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified 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 unearthened cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified 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.</p>	
<p>Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource, as defined in CEQA Guidelines Section 15064.5.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.5-1KC through MM 4.5-3KC.</p>	<p>Less than significant</p>
<p>Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.</p>	<p>Potentially significant</p>	<p>MM 4.5-4KC: 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. The Kern County Planning and Natural Resources Department shall also be notified of the discovery. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) 5097.98 (as amended by</p>	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Assembly Bill 2641). Per PRC Section 5097.98, the project operator 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, as prescribed in this section (PRC Section 5097.98), 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.	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC.	Less than significant
4.6 Energy			
Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation.	Less than significant	Implement Mitigation Measure MM 4.3-1KC (see Section 4.3, <i>Air Quality</i> , for full mitigation measure text).	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	Implement Mitigation Measure MM 4.3-1KC (see Section 4.3, <i>Air Quality</i> , for full mitigation measure text)..	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.7-2: Directly or indirectly cause potential substantial adverse effects, including	Potentially significant	MM 4.7-1KC: Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>the risk of loss, injury, or death, involving strong seismic ground shaking.</p>		<p>engineering report regarding soil conditions and geologic hazards on the project site.</p> <ul style="list-style-type: none"> a. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to the following: <ul style="list-style-type: none"> 1. Location of fault traces and potential for surface rupture and ground-shaking potential; 2. Maximum considered earthquake and associated ground acceleration; 3. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows; 4. Stability of any existing or proposed cut-and-fill slopes; 5. 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; and, 9. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground and any seismic hazards. b. The project proponent/operator shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid siting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, alternate setback distances may be proposed. c. The final geotechnical study shall be submitted for review and approval by the Kern County Public Works Department. The Kern 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		County Public Works Department shall evaluate final facility siting design prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the 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.	
Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.	Less than significant	No mitigation measures are 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 measures are required.	Less than significant
Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.	Potentially significant	Implement mitigation measures MM 4.7-1KCand MM 4.10-2KC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	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-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Potentially significant	Implement Mitigation Measure MM 4.7-1KC.	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 direct or indirect risks to life or property.	Potentially significant	Implement Mitigation Measure MM 4.7-1KC.	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 4.7-2KC: Prior to the issuance of any building permit for the operation 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(s) and leach field(s). A copy of the final	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		permit shall be submitted to the Kern County Planning and Natural Resources Department.	
<p>Impact 4.7-9: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, as defined in CEQA Guidelines Section 15064.</p>	Potentially significant	<p>MM 4.7-3KC: Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist shall be retained to prepare and implement a Paleontological Resources Mitigation Plan for the project. A Qualified Paleontologist is an individual who meets the education and professional experience standards as set forth by the Society of Vertebrate Paleontology (2010), which recommends the paleontologist shall have at least a master’s degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. The Paleontological Resources Mitigation Plan shall describe mitigation recommendations in detail, including paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements.</p> <p>MM 4.7-4KC: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology’s Professional Standards (2010), to carry out all mitigation measures related to paleontological resources.</p> <ol style="list-style-type: none"> 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. The Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements. c. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized 	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>artifact collecting or intentional disturbance of paleontological resources.</p> <p>d. The Paleontological Resources Awareness Training Guides shall be kept on-site and available for all personnel to review and be familiar with as necessary.</p> <p>MM 4.7-5KC: A qualified paleontologist or designated monitor shall be on-site initially to spot-check excavations below a depth of 1 foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall be suspended until an excavation depth of 5 feet below the ground surface is reached in the area.</p> <p>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.</p> <p>1. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should 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.</p> <p>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.</p> <p>c. Following the completion of construction, 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, recovery and curation efforts, and 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.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.7-6KC: 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.</p>	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.7-1KC and MM 4.7-3KC through MM 4.7-6KC and MM 4.10-2KC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant
4.8 Greenhouse Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	No mitigation measures are required.	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.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.9 Hazards and Hazardous Materials			
Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	<p>Implement Mitigation Measure MM 4.16-1KC (see Section 4.16, <i>Utilities and Service Systems</i>, for full mitigation measure text).</p> <p>MM 4.9-1KC: 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</p>	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section.</p> <p>a. The Hazardous Materials Business Plan shall:</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>c. A copy of the approved Hazardous Materials Business Plan shall be submitted to the Kern County Planning and Natural Resources Department.</p>	
<p>Impact 4.9-2: The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.9-1KC and MM 4.16-1KC (see Section 4.16, <i>Utilities and Service Systems</i>, for full mitigation measure text).</p> <p>MM 4.9-2KC: During project construction and operation, the project proponent/operator shall continuously comply with the following:</p> <p>a. The construction contractor or project personnel shall use herbicides that are approved 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</p>	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>and comply with all State and local regulations regarding herbicide use.</p> <ul style="list-style-type: none"> b. Herbicides shall be mixed and applied in conformance with the manufacturer’s directions. c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife. d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water. e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated. f. A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department. 	
<p>Impact 4.9-3: The project would result in a safety hazard for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Compatibility Plan.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.1-6KC and MM 4.1-7KC (see Section 4.1, <i>Aesthetics</i>, for full mitigation measure text).</p> <p>MM 4.9-3KC: Prior to issuance of building and grading permits for portions of the project that meet the Federal Aviation Administration’s noticing requirements, the project proponent/operator shall comply with the following:</p> <ul style="list-style-type: none"> a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17. b. Obtain a Federal Aviation Administration issued “Determination of No Hazard to Air Navigation.” This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		19.08.160 that all project components in the flight area would create no significant military mission impacts. c. Provide documentation to the Kern County Planning and Natural Resources Department demonstrating that a copy of the final site plan has been provided to the operators of the Mojave Air and Space Port.	
Impact 4.9-4: The project would impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.9-5: The project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Potentially significant	Implement Mitigation Measure MM 4.13-1KC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.9-1KC through MM 4.9-3KC; MM 4.13-1KC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text); MM 4.16-1KC (see Section 4.16, <i>Utilities and Service Systems</i> , for full mitigation measure text).	Significant and unavoidable
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	Potentially significant	Implement Mitigation Measure MM 4.9-1 (see Section 4.9, <i>Hazards and Hazardous Materials</i>). MM 4.10-1KC: Prior to issuance of a grading permit, and prior to engagement of decommissioning activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan for review and approval by the Regional Water Quality Control Board—Lahontan Region. The Stormwater Pollution Prevention Plan shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving off-site and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the Stormwater Pollution Prevention Plan may include the following: a. Minimization of vegetation removal.	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> b. Implementing sediment controls, including silt fences as necessary. c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas. d. Properly containing and disposing of hazardous materials used for construction on-site. e. Properly covering stockpiled soils to prevent wind erosion. f. Proper protections and containment for fueling and maintenance of equipment and vehicles. g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter. h. Cleanup of silt and mud on adjacent street due to construction activity. i. Checking all lined and unlined ditches after each rainfall. j. Restoring all erosion control devices to working order to the satisfaction of the Lahontan Regional Water Quality Control Board after each rainfall runoff. k. Installing additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise. <p>MM 4.10-2KC: Prior to the issuance of a grading permit, the project proponent/operator shall submit a final hydrologic study and drainage plan for review and approval by the Kern County Public Works Department. The final hydrologic study and drainage plan shall be designed to evaluate and minimize potential increases in runoff from the project site. The final hydrologic study and drainage plan shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. Numerical stormwater model for the project site, which would evaluate existing and proposed (with project) drainage conditions during storm events ranging up to the 100- year event. b. Consideration 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. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>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.</p> <p>d. 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 module sites located within a 100-year floodplain shall be graded to direct potential floodwaters without increasing the water surface elevations more than 1 foot or as required by Kern County’s Floodplain Ordinance.</p> <p>e. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code, Kern County Development Standards, Kern County Hydrology Manual and Kern County Floodplain Ordinance, and approved by the Kern County Public Works Department prior to the issuance of grading permits.</p> <p>MM 4.10-3KC: Prior to issuance of a building permit for any on-site water treatment facilities, the project proponent/project operator shall provide evidence of compliance with any applicable Waste Discharge Requirements established by the Lahontan Regional Water Quality Control Board to the Kern County Public Works Department – Building and Development.</p>	
<p>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.</p>	<p>Less than significant</p>	<p>No mitigation measures are required.</p>	<p>Less than significant</p>

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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 which would result in substantial erosion and/or sedimentation on-site or off-site.	Potentially significant	Implementation of Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.	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 which would substantially increase the rate or amount of surface runoff which would result in flooding on- or off-site.	Potentially significant	Implement Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.	Less than significant
Impact 4.10-5: 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 which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Implement Mitigation Measures MM 4.10-1KC through MM 4.10-3KC.	Less than significant
Impact 4.10-6: 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 which would impede or redirect flood flows.	Potentially significant	Implement Mitigation Measure MM 4.10-2KC.	Less than significant
Impact 4.10-7: The project would result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	Potentially significant	Implement Mitigation Measures MM 4.9-1KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> for full mitigation measure text), MM 4.10-1KC, and MM 4.10-2KC.	Less than significant
Impact 4.10-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Potentially significant	Implement Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-1KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> for full mitigation measure text), MM 4.10-1KC and MM 4.10-2KC.	Less than significant
4.11 Land Use and Planning			
Impact 4.11-1: The project would physically divide an established community.	No impact	No mitigation measures are required.	No Impact
Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigating an environmental effect.	Potentially significant	Implement Mitigation Measure MM 4.9-3KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation text), impacts would be less than significant.	Less than significant
Cumulative Impacts	Potentially significant	<p>MM 4.11-1KC: Prior to the issuance of any building permit, the project proponent/operator shall provide the Kern County Planning and Natural Resources Department with a Decommissioning Plan for review and approval. The plan shall be carried out by the proposed operator or a County-contracted consulting firm(s) at a cost to be borne by the project proponent/operator.</p> <p>a. The Decommissioning Plan shall include, but is not limited to, the following:</p> <ol style="list-style-type: none"> 1. Factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land. 2. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. 3. The assumption, when preparing the estimate, is that the project proponent/operator is incapable of performing the work or has abandoned the solar facility, thereby resulting in the County hiring an independent contractor to perform the decommission work. <p>b. In addition to submittal of a Decommissioning Plan, the project proponent/operator shall post or establish and maintain with the County financial assurances related to the deconstruction of the site as identified on the approved Decommissioning Plan should at any point in time the project proponent/operator determine it is not in their best</p>	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>interest to operate the facility. The financial assurances required prior to issuance of any building permit shall be established using one of the following:</p> <ol style="list-style-type: none"> 1. An irrevocable letter of credit; 2. A surety bond; 3. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommissioning plan; or 4. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department. <p>c. The financial assurances documents shall include the following verbiage, including any required verbiage through Kern County Planning and Natural Resources Department’s consultation and review with Kern County Counsel:</p> <ol style="list-style-type: none"> 1. Financial institution or surety company shall give the County a minimum of 120 days notice of intent to terminate the letter of credit or bond. 2. Financial assurances shall be reviewed annually by the respective counties or County-contracted consulting firm(s) at a cost to be borne by the project proponent/operator to substantiate that those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommissioning Plan. 3. Should the project proponent/operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance. 4. Financial institution or surety company shall be licensed to conduct business in the state of California. <p>d. Once deconstruction has occurred, financial assurances for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project proponent/operator.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>e. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months, that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent/operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project proponent/operator may provide the County with a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Department 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.</p> <p>f. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned.</p> <p>MM 4.11-2KC: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.</p>	
4.12 Noise			
<p>Impact 4.12-1: The project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.</p>	Potentially significant	<p>MM 4.12-1KC: To reduce temporary construction-related noise impacts, the following shall be implemented by the project proponent/operator:</p> <p>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.</p>	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>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. The construction contractor shall establish a Noise Disturbance Coordinator for the proposed 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. <li>c. During all construction or decommissioning phases of the proposed project located within the limits of unincorporated Kern County, the construction contractor shall limit all onsite noise-producing activities to the hours of 6:00 a.m. to 9:00 p.m., Monday through Friday, and to the hours of 8:00 a.m. and 9:00 p.m. on Saturdays and Sunday or as required through the Kern County Noise Ordinance (Kern County Code of Ordinances, Title 8, Chapter 8.36.020). <li>d. If construction-related activities must occur outside of permitted hours per Section 8.36.020 of the Kern County Code, the project proponent/operator shall obtain approval from the development services agency director or designated representative for project construction activities occurring between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends, within 1,000 feet of an occupied residential building, if audible to a person with average hearing ability at a distance of 150 feet from a construction site. As a condition of approval for exempting construction activity outside of permitted hours, the project proponent/operator shall implement a noise control plan including appropriate noise-reduction measures to the satisfaction of the development services agency director or designated representative, which may include the measures listed above. In addition, the noise control plan may include a requirement to restrict the duration of 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>construction activities outside of permitted hours within 1,000 feet of an occupied residential building.</p> <ul style="list-style-type: none"> e. 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). f. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency). g. 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. <p>MM 4.12-2KC: Prior to commencement of any on-site construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice.</p> <ul style="list-style-type: none"> a. The mailing notice shall be to all residences within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include: the construction schedule, 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. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.12-2: The project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12-4: The project would expose people residing or working in the project area to excessive noise levels, for a project located within the Kern County Airport Land Use Compatibility Plan.	Potentially significant	Implement Mitigation Measure MM 4.9-3KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full text).	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-3KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full text and MM 4.12-1KC and MM 4.12-2KC).	Less than significant
4.13 Public Services			
Impact 4.13-1: 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.	Potentially significant	<p>MM 4.13-1KC: Prior to the issuance of grading or building permits the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning.</p> <p>The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:</p> <ol style="list-style-type: none"> a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) mufflers in good condition. c. Fire rules shall be posted on the project bulletin board at the contractor’s field office and in areas visible to employees. 	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.</p> <p>e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.</p> <p>f. The project proponent/operator shall restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.</p> <p>g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.</p> <p>MM 4.13-2KC: The following Cumulative Impact Charge shall be implemented as payment on approved Conditional Use Permit acreage.</p> <p>a. Submittal of Building Permit and Phasing</p> <ol style="list-style-type: none"> 1. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification. 2. The map for either the total project or a phase shall calculate the Cumulative Impact Charge net acreage as follows: <ol style="list-style-type: none"> 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 3. Formula: Net Acreage = (2)A minus the sum of [(2)B + (2)C + (2)D]. 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>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.</p> <p>5. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map.</p> <p>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.</p> <p>b. Calculation and Payment of Cumulative Impact Charge</p> <p>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.</p> <p>2. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the County Administrative Office Fiscal Division and labeled Cumulative Impact Charge with the project name and phase number.</p> <p>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 Cumulative Impact Charge.</p> <p>MM 4.13-3KC: Written verification of ownership of the proposed project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company that pays assessed taxes that total less than \$3,000 per megawatt per year, then a Supplemental Cumulative Impact Charge (SCIC) shall be paid for the difference annually up to \$3,000 per megawatt. The SCIC payments shall be made annually directly to the County Administrative Office Fiscal Division (CAO) and labeled “Supplemental Cumulative Impact Charge (SCIC)” with the project name and phase number.</p>	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.13-4KC: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.</p> <p>MM 4.13-5KC: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.</p>	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-4KC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text). and MM 4.13-1KC through MM 4.13-5KC.	Less than significant
4.14 Transportation			
Impact 4.14-1: The project would conflict with an applicable plan, ordinance or policy establishing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.14-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	Less than significant	No mitigation measures are required.	Less than Significant
Impact 4.14-3: The project would substantially increase hazards due to a geometric design	Potentially significant	MM 4.14-1KC: Prior to the issuance of construction or building permits, the project proponent/operator shall:	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</p>		<ul style="list-style-type: none"> a. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved Construction Traffic Control Plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, Kern County Public Works Department - Development Review Division prior to the commencement of construction or decommissioning activities. b. Enter into a secured agreement with Kern County to ensure that any County-maintained roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County. c. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department - Development Review Division and the California Department of Transportation offices for District 9, as appropriate. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation <i>Manual on Uniform Traffic Control Devices</i> and <i>Work Area Traffic Control Handbook</i> and must include, but not be limited to, the following issues: <ul style="list-style-type: none"> 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, but not limited to, 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; and, 7. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across 	

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible. d. Institute construction work hours as necessary, such that the arrival and/or departure times of workers would be staggered as necessary. e. Identifying vehicle safety procedures for entering and exiting site access roads. f. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-County maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department Development Review and Kern County Planning and Natural Resources Department. g. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in electronic format. The County, in consultation with the project proponent/operator’s engineer, shall determine the extent of remediation required, if any.	
Impact 4.14-4: The project would result in inadequate emergency access.	Potentially significant	Implement Mitigation Measure MM 4.14-1KC.	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measure MM 4.14-1KC.	Less than significant
4.15 Tribal Cultural Resources			
Impact 4.15-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historic Places, or in a local register of historical	Potentially significant	Implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC (see Section 4.5, <i>Cultural Resources</i> for full mitigation measure text).	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
resources as defined in Public Resources Section 5020.1(k).			
Impact 4.15-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Potentially significant	Implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC (see Section 4.5, <i>Cultural Resources</i> for full mitigation measure text).	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC (see Section 4.5, <i>Cultural Resources</i> , for full mitigation measure text).	Less than significant
4.16 Utilities and Service Systems			
Impact 4.16-1: 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 telecommunication facilities, the construction or relocation of which could cause significant environmental effects.	Potentially significant	Implement Mitigation Measure MM 4.10-2KC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text.)	Less than significant
Impact 4.16-2: The project would have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.16-3: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure or otherwise	Potentially significant	MM 4.16-1KC: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
impair the attainment of solid waste reduction goals.		a. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, 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 on-site Recycling Coordinator shall also be responsible for ensuring waste requiring special disposal are handled according to state local regulations that are in effect at the time of disposal. d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations, and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.	
Impact 4.16-4: The project would comply with Federal, State, and Local management and reduction statutes and regulations related to solid waste.	Potentially significant	Implement Mitigation Measure MM 4.16-1KC.	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.10-1KC, MM 4.10-2KC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text), and MM 4.16-1KC.	Less than significant
4.17 Wildfire			
Impact 4.17-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant	Implement Mitigation Measure MM 4.14-1KC (see Section 4.14, <i>Traffic and Transportation</i> , for full mitigation measure text).	Less than significant
Impact 4.17-2: The project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.	Potentially significant	Implement Mitigation Measure MM 4.13-1KC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant

Table 1-7. Summary of Impacts, Mitigation Measures, and Levels of Significance – Kern County, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.17-3: 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	Implement Mitigation Measure MM 4.13-1KC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measure MM 4.13-1KC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Significant and unavoidable

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.1 Aesthetics			
Impact 4.1-1: Have a substantial adverse effect on a scenic vista.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.1-2: 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 measures are required.	Less than significant
Impact 4.1-3: Substantially degrade the existing visual character or quality of public views of the site and its surroundings.	Significant and unavoidable	<p>MM 4.1-1CC: 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 City of California City Community Development Department. The program shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities. b. The project proponent/operator shall erect signs with contact information for the project proponent/operator’s maintenance staff at regular intervals along the site boundary, as required by the City of California City Community Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the City of California City Community Development 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. <p>MM 4.1-2CC: The project proponent shall install metal fence slats or similar view-screening materials, as approved by the City of California City</p>	Significant and unavoidable

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Community Development Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, unless the adjacent property is owned by the project proponent (to be verified by the City of California City Community Development Department) or a public or private agency that has submitted correspondence to the City of California City Community Development Department requesting this requirement be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.</p> <p>MM 4.1-3CC: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the City of California City Community Development Department, that will ensure all project facilities including operations and maintenance buildings, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.</p> <p>MM 4.1-4CC: Wherever possible, within the proposed project boundary, the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. 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 City of California City Community Development Department for review and approval. The plan shall include the measures detailed below.</p> <ol style="list-style-type: none"> a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to revegetate 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 do not require revegetation. b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used on-site; (2) a timeline for seeding the site; (3) the details of which areas are to be revegetated; (4) a list of the consultation efforts completed; (5) the methods and schedule for 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>installation of fencing that complies with wildlife agency regulations; and (6) a clear prohibition of the use of toxic rodenticides.</p> <p>c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish revegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the City of California City Community Development Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).</p> <p>d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.</p> <p>e. The revegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the City of California City Community Development Department for each of the three years. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful, re-evaluation of revegetation methods shall be made in consultation with the City of California City Community Development Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.</p>	
<p>Impact 4.1-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.</p>	<p>Potentially significant</p>	<p>MM 4.1-5CC: Prior to construction and prior to final activation of the solar facility, the project proponent shall demonstrate to the City of California City Community Development Department that the project site complies with the applicable standards regarding project lighting within the City and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.1-6CC: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the City of California City Community Development Department for review and final approval.</p> <p>MM 4.1-7CC: Prior to final activation of the solar facility, the project operator shall demonstrate that the operations and maintenance building, energy storage facilities, and collector facilities utilize materials that minimize glare, as approved by the City of California City Community Development Department.</p>	
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.1-1CC through MM 4.1-7CC.	Significant and unavoidable
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: Conflict with existing zoning for agricultural use or a Williamson Act Contract.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.3 Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	Potentially significant	MM 4.3-1CC: The project operator shall ensure that construction, operation, and decommissioning of the proposed project shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. The project operator shall develop a fugitive dust control plan (Plan) for the project. The Plan shall address short-term construction and long-term operational activities. The Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to the start of any earthmoving activity. The project operator shall also develop a decommissioning fugitive dust control plan (Decommissioning Plan) for the project if a decision is made to decommission and remove the solar facilities	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>in the future. The Decommissioning Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to any decommissioning activities.</p> <p>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:</p> <ul style="list-style-type: none"> a. The following dust control measures shall be implemented during land preparation, excavation, and/or demolition: <ul style="list-style-type: none"> 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 three times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative. 2. All disturbed areas on the project site and proposed transmission corridor shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods. The frequency of watering can be reduced or eliminated during period of precipitation. 3. All unpaved construction and operation/maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent. 4. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures or neighboring property, or as identified in a plan approved by the Eastern Kern Air Pollution Control District. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> 5. All trucks entering or leaving the project site shall cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of six inches. 6. Areas disturbed by clearing, earth-moving, or excavation activities shall be minimized at all times. 7. Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust. 8. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds. 9. Prior to construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed where appropriate. 10. Where acceptable to the California City Fire Department, weed control shall be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering. b. After clearing, grading, earth moving and/or excavating is completed within any portion of the project site, the following dust control practices shall be implemented: <ul style="list-style-type: none"> 1. Once initial leveling has ceased, all inactive soil areas within the construction site shall be immediately treated with a dust palliative. 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. 3. All unpaved road areas shall be treated with a dust palliative or graveled to prevent excessive dust. c. During all phases of construction, the following vehicular control measures shall be implemented: <ul style="list-style-type: none"> 1. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, with the exception that vehicles may travel 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.</p> <ol style="list-style-type: none"> 2. Visible speed limit signs shall be posted at the project site entrance(s). 3. All areas with vehicle traffic, especially the main entrance roadway to the project site, shall be graveled or treated with dust palliatives so as to prevent track-out onto public roadways. 4. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard. 5. Streets adjacent to the project site shall be kept clean and project related accumulated silt shall be removed on a regular basis. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited. 6. Access to the project site shall be by means of an apron into the facility site from adjoining surfaced roadways. The apron 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 facility site, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires. <p>MM 4.3-2CC: The project operator and/or its contractor(s) shall implement the following measures during construction of the proposed project on the project site:</p> <ol style="list-style-type: none"> a. All equipment shall be maintained in accordance with the manufacturer’s specifications. b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> c. No individual piece of construction equipment shall operate no longer than eight cumulative hours per day. d. Electric equipment shall be used whenever feasible 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 if permitted under manufacturer’s guidelines. <p>MM 4.3-3CC: The project operator shall continuously comply with the following measures during construction and operation to control NOx emissions from on-road heavy-duty diesel haul vehicles that are contracted on a continuing basis for use to haul equipment and materials for the proposed project:</p> <ul style="list-style-type: none"> a. 2006 engines or pre-2006 engines with California Air Resources Board certified Level 3 diesel emission controls will be used to the extent possible. b. All on-road construction vehicles, except those meeting the 2006/California Air Resources Board certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards to the greatest extent possible. This does not apply to worker personal vehicles. c. The construction contractor shall ensure that all on-road construction vehicles are properly tuned and maintained in accordance with the manufacturer’s specifications. <p>MM 4.3-4CC:The project operator shall continuously comply with the following measures during operation to control fugitive dust emissions:</p> <ul style="list-style-type: none"> a. The unpaved main access road for employees and deliveries to the maintenance complex 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 California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		b. The other unpaved roads at the project site 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 10 miles per hour, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s) from the central maintenance complex.	
<p>Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.</p>	<p>Significant and unavoidable</p>	<p>Implement Mitigation Measures MM 4.3-1CC through MM 4.3-4CC, and:</p> <p>MM 4.3-5CC: At the time of project implementation, the Kern County Public Health Services Department shall determine if the COVID-19 pandemic is still present at a level where spread to sensitive receptors could occur. If determined necessary by the Kern County Public Health Services Department, a COVID-19 Health and Safety Plan shall be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy shall be submitted to the California City Community Development Department for review and approval.</p> <p>MM 4.3-6CC: Prior to ground disturbance activities, the project proponent shall provide a “Valley Fever Training Information Packet” and conduct training sessions for all construction personnel. A copy of the handout and a schedule of education sessions shall be provided to the California City Community Development Department. All evidence of the training session(s) and handout(s) shall be submitted to the California City Community Development Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The evidence submitted to the California City Community Development Department regarding the “Valley Fever Training Handout” and session(s) shall include the following:</p> <p>a. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.</p>	<p>Significant and unavoidable</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>b. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; systems of exposure; and instructions for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent symptoms lasting more than three days shall be recommended to seek immediate medical advice.</p> <p>c. Training on methods that may help prevent Valley Fever infection.</p> <p>d. 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. Though the use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to the California City Community Development Department. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.</p> <p>MM 4.3-7CC: Prior to the issuance of grading permits, the California City Community Development Department shall verify that a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.</p>	
<p>Impact 4.3-3: The project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.</p>	<p>Less than significant</p>	<p>No mitigation measures are required.</p>	<p>Less than significant</p>
<p>Impact 4.3-4: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.</p>	<p>Significant and unavoidable</p>	<p>Implement Mitigation Measures MM 4.3-1CC through MM 4.3-4CC and MM 4.3-5CC through MM 4.3-7CC.</p>	<p>Significant and unavoidable</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.3-1CC through MM 4.3-7CC.	Significant and unavoidable
4.4 Biological Resources			
<p>Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.</p>	Potentially significant	<p>Implement Mitigation Measure MM 4.1-5CC (see Section 4.1, <i>Aesthetics</i>, for full Mitigation Measure text), regarding compliance with the Kern County Dark Skies Ordinance.</p> <p>MM 4.4-1CC: Prior to the issuance of grading or building permits, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by California Department of Fish and Wildlife to oversee compliance with protection measures for all listed and other special-status species. The project Lead Biologist shall be on-site during all fencing and ground disturbance activities throughout the construction phase. The project Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures described herein. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The project Lead Biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.</p>	Less than significant
		<p>MM 4.4-2CC: Prior to the issuance of grading or building permits, and for the duration of construction activities, all new construction workers at the project site shall attend a Worker Environmental Awareness Program Worker Environmental Awareness Program, developed and presented by the project Lead Biologist. As part of the Worker Environmental Awareness Program training, the project Lead Biologist shall perform the following training-related tasks:</p> <ul style="list-style-type: none"> a. Provide the training materials for Worker Environmental Awareness Program training. These materials shall include the measures and mitigation requirements for protected plant and wildlife species (e.g., avoidance and buffer requirements, nighttime construction limitations), and applicable fire protection measures. Worker Environmental Awareness Program training shall also include driver training to avoid and minimize collision risks with protected species, and reporting protocols in the event that any dead or injured wildlife are discovered. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>b. Send a copy of all Worker Environmental Awareness Program training materials to the California City Community Development Department.</p> <p>c. Maintain a list on-site of all employees who have undergone Worker Environmental Awareness Program training. A copy of this list shall be provided to the California City Community Development Department as necessary.</p> <p>MM 4.4-3CC: The Worker Environmental Awareness Program shall be presented by the Lead Biologist and shall include information on the life history of each federal and state-listed species, as well as other special-status wildlife, natural communities, and plant species that may be encountered during construction activities, their legal protections, the definition of “take” under the federal and state Endangered Species Acts, measures the project operator is implementing to protect special-status species, reporting requirements, specific measures that each worker shall employ to avoid take of special-status wildlife species, and penalties for violation of the acts. Training shall be documented as follows:</p> <p>a. An acknowledgement form signed by each worker indicating that environmental training has been completed.</p> <p>b. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are in possession of hard hats with the required sticker.</p> <p>c. A copy of the training transcript/training video and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgements forms shall be submitted to the California City Community Development Department.</p> <p>MM 4.4-4CC: During construction and decommissioning the anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with stakes and flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. The construction crews and contractor(s) shall be held responsible for unauthorized impacts from construction activities to sensitive biological</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>resources that are outside the areas defined as subject to impacts by project permits.</p> <p>MM 4.4-5CC: New and existing roads that are planned for either construction or widening shall not extend beyond the planned impact area. All vehicles passing or turning around shall do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, a biological resources survey shall be conducted by the Lead Biologist or by biological monitor(s) under the Lead Biologist’s supervision to determine if listed or special-status species would be impacted. Impacts shall be avoided to the maximum extent practicable or shall be fully mitigated for. Construction shall not begin until the route is cleared for biological resources. The route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction and use.</p> <p>MM 4.4-6CC: Spoils shall be stockpiled in areas disturbed by the project. Stockpile areas shall be marked to define the limits where stockpiling can occur. Standard best management practices shall be employed to prevent loss of habitat due to erosion caused by project-related impacts (i.e., grading or clearing for new roads). All detected erosion shall be remedied within two days of discovery.</p> <p>MM 4.4-7CC: All ground disturbance construction and decommissioning activities shall be monitored by the qualified Lead Biologist or by biological monitors under the Lead Biologist’s supervision to ensure compliance with avoidance and minimization measures.</p> <p>MM 4.4-8CC: During construction and decommissioning, the project operator and/or contractor shall implement the following general avoidance and minimization measures:</p> <ol style="list-style-type: none"> a. Prior to issuance of grading or building permits but after consulting with the United States Fish and Wildlife Service and California Department of Fish and Wildlife, the solar facility project site (east of State Route 14 for the Kudu Solar site) shall be fenced with a permanent desert tortoise exclusion fence to keep any desert tortoises that may be using habitat adjacent to the facility from entering during construction, operations and maintenance, and dismantling and restoration (decommissioning) phases. The project proponent shall submit a fencing plan that outlines the location, type of fence, and 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>construction methods to United States Fish and Desert tortoise-proof gates or guards shall be established at all photovoltaic solar facility entry points, unless otherwise approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife. Workers installing the exclusion fencing shall have undergone the worker training program mandated in Mitigation Measure MM 4.4-2CC and a biological monitor under the authority of the project Lead Biologist shall be present during exclusion fencing installation.</p> <p>b. The fencing shall be routinely inspected after precipitation events of more than one inch at each ephemeral drainage crossing. Any damage to the fencing shall be repaired immediately or no later than 2 days following the observation.</p> <p>c. Following the construction of desert tortoise exclusion fencing around the solar facility perimeters, clearance surveys shall be conducted by the Lead Biologist to ensure that no desert tortoises, Mohave ground squirrels, or other listed wildlife species are trapped within the fenced area. The Lead Biologist may be assisted by biological monitors under the supervision of the Lead Biologist. The clearance surveys shall be conducted no more than 30 days prior to ground disturbing activities associated with construction, operations and maintenance, or decommissioning. Clearance surveys shall adhere to the current United States Fish and Wildlife Service clearance survey protocols described in the Desert Tortoise Field Manual, including a minimum of two clearance passes to be completed after desert tortoise-proof fencing is installed, which shall coincide with heightened desert tortoise activity from late March through May and September through October or as outlined in the Project’s Habitat Conservation Plan or Incidental Take Permit. The Designated Biologist(s) shall perform pre activity surveys for desert tortoise and shall remain on-site daily until the construction period ends or exclusion fencing has been installed to preclude desert tortoises from entering a given work area (work area is completely enclosed with exclusionary fence). The Designated Biologist will remain available even after the fence is installed and be called to the site if a tortoise or Mohave ground squirrel is found inside the fence, emphasizing in the tortoise awareness program that only agency</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>authorized biologists, not construction workers, are allowed to handle tortoises. The Designated Biologist shall monitor the exclusionary fence on a weekly basis after its installation to ensure its integrity and function are maintained until the end of construction. United States Fish and Wildlife Service and California Department of Fish and Wildlife may impose modified or additional fencing requirements in the project’s final 2081 Permit and/or Habitat Conservation Plan, if required.</p> <p>d. If a desert tortoise or Mohave ground squirrel is found on the site during project construction, operation, or decommissioning, activity shall cease in the vicinity of the animal and the desert tortoise and/or Mohave ground squirrel shall be passively restricted to the area encompassing its observed position on the construction site and its point of entry shall be determined if possible. The Lead Biologist shall install a temporary tortoise-proof fence around this area. Concurrent with this effort, United States Fish and Wildlife Service and California Department of Fish and Wildlife shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the desert tortoise and/or Mohave ground squirrel is observed leaving the site, work in the area can resume. A report shall be prepared by the Lead Biologist to document the activities of the desert tortoise and/or Mohave ground squirrel within the site; all fence construction, modification, and repair efforts; and movements of the desert tortoise and/or Mohave ground squirrel once again outside the permanent desert tortoise-proof fence. This report shall be submitted to wildlife and resource agency representatives, the California City Community Development Department. If passive relocation is not possible, desert tortoise and/or Mohave ground squirrel may also be translocated in accordance with a United States Fish and Wildlife Service and/or California Department of Fish and Wildlife approved Translocation Plan.</p> <p>e. Outside permanently fenced desert tortoise exclusion areas where desert tortoise may be present, the project operator shall limit the areas of disturbance in desert tortoise and Mohave ground squirrel habitat. Parking areas, new roads, pulling sites, and locations for staging,</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>storage, excavation, and disposal shall be confined to the smallest areas possible. These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.</p> <p>f. The Lead Biologist or biological monitor shall monitor any ground-disturbance activities that occur where desert tortoise may be present outside the desert tortoise exclusion fencing. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours where desert tortoise are determined to be present.</p> <p>MM 4.4-9CC: The project operator and/or contractor shall implement the following during project decommissioning:</p> <p>a. All applicable construction phase general protection measures shall be implemented during decommissioning.</p> <p>b. A 15-mile-per-hour speed limit on paved or stabilized unpaved roads shall be applied for travel during decommissioning activities. Travel shall be confined to existing roads and previously disturbed areas.</p> <p>c. If any special-status wildlife is detected in the work area during decommissioning activities, no work shall be conducted until the individual moves on its own outside of the work area.</p> <p>d. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours.</p> <p>MM 4.4-10CC: During construction the project operator and/or contractor shall implement the following general avoidance and protective measures:</p> <p>a. The Lead Biologist or biological monitor shall monitor all ground-disturbance activities. Work shall only occur during daylight hours as practicable. Specialized testing activities and/or continuous operations (i.e., well drilling) may be conducted at night when necessary. Prior to conducting vegetation removal or grading activities inside the fenced area, a Lead Biologist or biological monitor under the supervision of a Lead Biologist shall survey the area immediately prior to conducting these activities to ensure that no listed or special-status animals or plants are present. The project Lead Biologist shall have the right to halt all activities that are in violation of the special species protection measures. Work shall proceed only after hazards to special species are</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>removed and the species is no longer at risk. The project biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.</p> <ul style="list-style-type: none"> b. At the end of each work day, the Lead Biologist or Qualified Biologist shall ensure that all trenches, bores, and other excavations outside the permanently fenced area in suitable habitat for desert tortoise have been inspected for the presence of desert tortoise and backfilled, if no tortoise is present. If backfilling is not feasible, these excavations shall be modified to ensure that they cannot potentially entrap desert tortoises (e.g., equipped with desert tortoise escape ramps, covered to prevent desert tortoise access, enclosed with a desert tortoise exclusion fence). All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of four inches or greater shall be thoroughly inspected for listed and special-status wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status animal is discovered inside a pipe that section of pipe shall not be moved until the animal has moved off on its own. If the animal does not move in a timely manner, then the appropriate resource agency shall be consulted. c. Any construction pipe, culvert, or similar structure stored within desert tortoise habitat (i.e., outside areas with desert tortoise exclusion fencing) shall be inspected for desert tortoise before the material is moved, buried, or installed. d. Water used for dust abatement shall be minimized, as allowed by California City Community Development Department, or managed in such a manner as to prevent the formation of puddles that could attract common ravens, predators, and other wildlife species to or near the site. e. No vehicle or equipment parked outside the fenced areas shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of desert tortoise. If present, the desert tortoise shall be left to move on its own. f. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicle speeds within the project site 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>shall not exceed 25 miles per hour on roads within desert tortoise habitat.</p> <ul style="list-style-type: none"> <li>g. All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Lead Biologist shall be informed of any hazardous spills immediately and hazardous spills shall be cleaned up as soon as practical and the contaminated soil shall be properly disposed of at a licensed facility. <li>h. A long-term trash abatement program shall be established for construction, operations, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. <li>i. Workers shall be prohibited from bringing pets and firearms to the project and from feeding wildlife. <li>j. Intentional killing or collection of either plant or wildlife species, including listed species, in the project site and surrounding areas shall be prohibited. The Lead Biologist, wildlife and resource agency representatives and California City Community Development Department shall be notified of any such occurrences within 24 hours. <li>k. Construction monitoring shall be conducted by either the Lead Biologist or by biological monitors under the Lead Biologist’s supervision. The biological monitors shall have experience in monitoring for special-status wildlife. <li>l. During construction, daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report for the wildlife and resource agencies and California City Community Development Department on a monthly basis, documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall biological resources-related activities conducted, including the worker awareness training, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.4-11CC: The introduction of exotic plant species shall be avoided and controlled wherever possible and may be achieved through physical or chemical removal and prevention. Preventing exotic plants from entering the site via vehicular sources shall include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming and going from the site. Earthmoving equipment shall be cleaned prior to transport to the project site. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means.</p> <p>MM 4.4-12CC: Prior to construction, the project operator and/or contractor shall retain a qualified biologist or botanist to conduct preconstruction rare plant surveys(s) in areas identified as potentially suitable habitat for Barstow woolly sunflower and/or Mojave spineflower within the Kudu project site during the appropriate blooming period in accordance with the guidelines established by the California Department of Fish and Wildlife. If Barstow woolly sunflower and/or Mojave spineflower is not observed during the survey, no further action is required.</p> <p>a. If Barstow woolly sunflower and/or Mojave spineflower is observed within the project footprint during preconstruction surveys, the qualified biologist/botanist shall delay ground-disturbing activities, mark or fence the population(s) identified for avoidance, and contact California Department of Fish and Game for consultation. The proposed project shall be designed by the Lead Biologist, to reduce impacts to the species through the establishment of preservation areas and buffers. If avoidance or minimization measures are implemented on-site, a Habitat Mitigation Plan shall be developed to ensure adequate management and conservation of botanical resources on-site over the long term. A copy of the Habitat Mitigation Plan shall be submitted to the California City Community Development Department.</p> <p>b. If Barstow woolly sunflower and/or Mojave spineflower is detected during preconstruction surveys, and impacts cannot be avoided, the Habitat Mitigation Plan would also include the following:</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ol style="list-style-type: none"> 1. A figure illustrating the area of the population to be preserved, and the area of the population to be removed; 2. Identification of on-site or off-site preservation, restoration, or enhancement location(s); 3. Methods for preservation, restoration, enhancement, and/or population translocation; 4. A replacement ratio and success standard of 1:1 for occupied habitat lost unless a lower mitigation ratio and/or alternative mitigation is agreed to in coordination with California Department of Fish and Wildlife; 5. A five-year monitoring program to ensure mitigation success; 6. Adaptive management and remedial measures in the event that performance standards are not achieved; 7. Financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity. <p>MM 4.4-13CC: Prior to the issuance of grading or building permits, the project operator shall:</p> <ol style="list-style-type: none"> a. Provide evidence to the California City Community Development Department that consultation with the Kern County Agricultural Commissioner has taken place regarding removal of plants protected under the California Desert Native Plant Act; b. If the Agricultural Commissioner determines that a permit is not required, the project operator shall provide a letter describing the consultation process and Commissioner’s determinations, indicating that such authorization is not required. The letter shall also identify the Commissioner’s points of contact and contact information; c. If required by the Agricultural Commissioner, the project operator shall provide evidence to the California City Community Development Department that a California Desert Native Plant Act removal permit has been obtained. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>MM 4.4-14CC: The measures listed below shall be implemented prior to and during construction, operations, and decommissioning at the project site.</p> <ul style="list-style-type: none"> a. The project operator has filed for an Incidental Take Permit for Mohave ground squirrel and desert tortoise with California Department of Fish and Wildlife, and a Habitat Conservation Plan with the United States Fish and Wildlife Service for desert tortoise. The project operator shall mitigate for permanent impacts to suitable desert tortoise and/or Mohave ground squirrel habitat, through an approved mitigation bank, in-lieu fee program, or other mechanism accepted by California Department of Fish and Game and/or United States Fish and Wildlife Service, as outlined in each agency’s respective permit. Compensatory mitigation acreage for permanent impacts to nesting, occupied, and satellite burrows and/or habitat shall be determined and acquired in consultation with the wildlife or resource agency. Compensatory mitigation would provide habitat for desert tortoise and Mohave ground squirrel, as well as rare plants and State Waters (only if impacted by the project). Verification of compliance shall be submitted to the California City Community Development Department prior to the onset of activities that have the potential to impact covered species. b. Prepare a Habitat Mitigation and Monitoring Plan (if required, should an incidental take permit be required for the project) or provide a copy of the project’s incidental take permit that outlines all project compensatory mitigation for desert tortoise, and Mohave ground squirrel, in coordination with the California Department of Fish and Wildlife. <ul style="list-style-type: none"> 1. Compensatory mitigation shall provide ecological benefits to covered species that are similar to or better than the projects impacts on covered species. Mitigation sites in the vicinity of the project are preferable. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>2. Mitigation shall meet California Department of Fish and Wildlife’s durability requirements.</p> <p>3. The plan, or incidental take permit, shall identify conservation actions, where applicable, to demonstrate that the compensatory lands are managed to provide durable environmental benefits to the covered species.</p> <p>4. The plan, or incidental take permit, shall identify an approach for funding assurance for the long-term management of the conserved land.</p> <p>MM 4.4-15CC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.</p> <p>a. A project Lead Biologist shall be on-site during all construction activities in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows not more than 14 days prior to ground disturbance and/or prior to desert tortoise exclusion fencing installation. The survey methodology shall be consistent with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls (and may be combined with other pre-construction surveys). As burrows are searched, biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to California Department of Fish and Wildlife and the California City Community Development Department.</p> <p>b. If no burrowing owls are detected, no further mitigation is necessary. If burrowing owls are detected, no ground-disturbing activities, such as road construction or installation of solar arrays or ancillary facilities, shall be permitted within the distances specified in Table 2 of the Staff Report from an active burrow during the nesting and</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation																							
		<p>fledging seasons (April 1 to August 15 and August 16 to October 15, respectively), unless otherwise authorized by California Department of Fish and Wildlife. The specified buffer distance ranges from 656 feet to 1,640 feet, according to the time of year and the level of disturbance. Buffers shall be established in accordance with the table provided in Table 4.4-6, <i>Burrowing Owl Burrow Buffers</i>, below, and occupied burrows shall not be disturbed during the nesting season unless a qualified biologist approved by California Department of Fish and Wildlife, verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season (April 1 to October 15) or as specified by the Incidental Take Permit issued by California Department of Fish and Wildlife.</p> <p>c. During the nonbreeding (winter) season (October 16 to March 31), consistent with the table below (<i>Burrowing Owl Burrow Buffers</i>), all ground-disturbing work shall maintain a distance ranging from 164 feet to 1,640 feet from any active burrows depending on the level of disturbance. If active winter burrows are found that would be directly affected by ground-disturbing activities, owls can be displaced from winter burrows according to recommendations made in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012).</p> <p style="text-align: center;">Table 4.4-6 Burrowing Owl Burrow Buffers</p> <table border="1"> <thead> <tr> <th rowspan="2">Location</th> <th rowspan="2">Time of Year</th> <th colspan="3">Level of Disturbance (in feet)</th> </tr> <tr> <th>Low</th> <th>Medium</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>Nesting Sites</td> <td>April 1 - Aug 15</td> <td>656</td> <td>1,640</td> <td>1,640</td> </tr> <tr> <td>Nesting Sites</td> <td>Aug 16 - Oct 15</td> <td>656</td> <td>656</td> <td>1,640</td> </tr> <tr> <td>Any occupied burrow</td> <td>Oct 16 - Mar 31</td> <td>164</td> <td>328</td> <td>1,640</td> </tr> </tbody> </table> <p>Source: California Department of Fish and Game 2012</p> <p>d. Burrowing owls should not be excluded from burrows unless or until a Burrowing Owl Exclusion Plan is developed by the Lead Biologist</p>	Location	Time of Year	Level of Disturbance (in feet)			Low	Medium	High	Nesting Sites	April 1 - Aug 15	656	1,640	1,640	Nesting Sites	Aug 16 - Oct 15	656	656	1,640	Any occupied burrow	Oct 16 - Mar 31	164	328	1,640	
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Nesting Sites	April 1 - Aug 15	656	1,640	1,640																						
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Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>and approved by the applicable local California Department of Fish and Wildlife office and submitted to the California City Community Development Department. The plan shall include, at a minimum:</p> <ol style="list-style-type: none"> 1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping; 2. Type of scope to be used and appropriate timing of scoping to avoid impacts; 3. Occupancy factors to look for and what shall guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door). 4. How the burrow(s) shall be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow); 5. Removal of other potential owl burrow surrogates or refugia on-site; 6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency; 7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take; 8. How the impacted site shall continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete. 9. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>year have fledged if the exclusion shall occur immediately after the end of the breeding season.</p> <p>10. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).</p> <p>e. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or heavy material shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation.</p> <p>f. During construction and decommissioning activities, monthly and final compliance reports shall be provided to California Department of Fish and Wildlife, California Community Development Department, and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.</p> <p>MM 4.4-16CC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls:</p> <p>a. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented off-site in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) and in consultation with California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented:</p> <p>1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including de-compacting soil and revegetating.</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ol style="list-style-type: none"> 2. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows or burrowing owl impacted are replaced based on a site-specific analysis and shall include: <p style="margin-left: 40px;">Permanent conservation or enhancement of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals.</p> 3. Permanently protect or enhance mitigation land through coordination with California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits. <p>b. Develop and implement a mitigation land management plan in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Wildlife 2012) guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.</p> <ol style="list-style-type: none"> 1. Fund the maintenance, management, or enhancement of mitigation land. 2. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed. 3. Mitigation lands or California Department of Fish and Wildlife-approved habitat enhancement projects should be on, adjacent or 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present.</p> <p>4. Consult with the California Department of Fish and Wildlife when determining off-site mitigation.</p> <p>MM 4.4-17CC: Prior to ground disturbance the following shall be implemented:</p> <p>a. Preconstruction surveys shall be conducted by a qualified biologist for the presence of desert kit fox and American badger dens prior to installation of desert tortoise exclusion fencing. Copies of the completed surveys shall be submitted to California City Community Development Department.</p> <p>b. The survey shall be conducted in areas of suitable habitat for American badger and desert kit fox, which includes fallow agricultural land and scrub habitats. Surveys shall not be conducted for all areas of suitable habitat at one time; they shall be phased so that surveys occur within two weeks prior to disturbance of that portion of the site. If no potential American badger or desert kit fox dens are present, no further mitigation is required.</p> <p>c. If potential dens are observed, the following measures are required to avoid potential adverse effects to American badger and desert kit fox:</p> <p>1. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers or foxes from reuse during construction. Den excavation shall be prohibited during the pupping season to avoid possible pup mortality resulting from a lack of available refugia.</p> <p>2. Passive relocation shall be prohibited during the pupping season, which is February 15 to June 1 for both species. If the qualified biologist determines that potential dens outside the breeding season may be active, the biologist shall notify the California Department of Fish and Wildlife. Entrances to the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>determines that badgers and foxes have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction. The collapsing of active desert kit fox dens shall not occur without prior consultation with the California Department of Fish and Wildlife. A biologist shall remain on-call throughout construction in the event that badger or desert kit fox are present on the site.</p> <p>3. Construction activities shall not occur within 50 feet of active badger dens. The project operator shall contact California Department of Fish and Wildlife immediately if natal badger dens are detected to determine suitable buffers and other measures to avoid take.</p> <p>4. Construction activities shall not occur within 100 feet of active kit fox dens. The project operator shall contact California Department of Fish and Wildlife immediately if pupping kit fox dens are detected to determine suitable buffers and other measures to avoid take.</p> <p>MM 4.4-18CC: Not more than 14 days prior to site clearing and/or ground disturbance in a given area, a qualified biologist shall conduct a preconstruction avian nesting survey. Copies of the completed surveys shall be submitted to California City Community Development Department. The surveys shall be conducted as follows:</p> <p>a. Surveys shall not be conducted for an entire project site at one time; they shall be phased so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site—this includes ground nesting species (e.g., western burrowing owl).</p> <p>b. If construction is scheduled to occur during the non-nesting season (August 2 to January 31), no preconstruction surveys for birds or additional measures are required.</p> <p>c. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 14 days or more in construction</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again.</p> <p>d. If active nests are found within a 250-foot, no-disturbance buffer (or as otherwise determined in consultation with California Department of Fish and Wildlife) shall be created around the active nests. If the nest(s) are found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified wildlife biologist has determined that the birds have fledged or by relocating the project component(s) to avoid the area.</p> <p>e. All vertical tubes used in project construction, such as solar mounts and chain link fencing poles shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of special-status birds.</p> <p>MM 4.4-19CC: Prior to issuance of a grading or building permit, the project operator shall Submit written documentation to the California City Community Development Department verifying that all power lines are designed in accordance with Avian Power Line Interaction Committee Guidelines. The project operator shall conform to the latest practices (as outlined in the Avian Power Line Interaction Committee Guidelines document) to protect birds from electrocution and collision.</p> <p>MM 4.4-20CC: The project operator shall develop a site-specific Common Raven Management Plan in accordance with United States Fish and Wildlife Service guidelines and shall implement management measures for ravens in the project area. These measures may include but are not limited to designing structures to eliminate perches, waste management, road kill management, management of ponded water during construction and operations, and nest removal on structures within the photovoltaic solar facility site and along the transmission line.</p>	
<p>Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS.</p>	<p>Potentially significant</p>	<p>MM 4.4-21CC: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided to the extent practicable and shall be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board and the California City Community Development Department. The</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>report shall include information as shown below as a plan as necessary and shall outline compliance to the following:</p> <ul style="list-style-type: none"> a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided to the extent practicable. This may be shown in plan form. b. Any material/spoils from project activities should be located away from jurisdictional areas. Jurisdictional areas shall be protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and/or straw bale barriers, as appropriate. Protection measures shall follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan and in the Hazardous Materials Business Plan. c. Prior to the start of construction activities, the project proponent/operator shall provide evidence that all fueling, hazardous materials storage areas, and operations and maintenance activities shall be sited at least 100 feet away from on-site drainages and other water features, as identified in the project-specific delineation of wetlands and waters. d. Any spillage of hazardous material shall be stopped if it can be done safely. The contaminated area shall be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified. <p>MM 4.4-22CC: If it is determined during final siting that jurisdictional ephemeral drainages cannot be avoided, the project proponent shall notify the California Department of Fish and Wildlife of potentially jurisdictional features and, if necessary, obtain a Lake and Streambed Alteration Agreement. If waters of the State are impacted, the owner/operator shall notify the Lahontan Regional Water Quality Control Board, and obtain a Water Quality Certification pursuant to California Porter-Cologne Act, if required.</p>	
<p>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.</p>	<p>Less than significant</p>	<p>Implement Mitigation Measures MM 4.4-21CC and MM 4.4-22CC.</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.1-5CC (see Section 4.1, <i>Aesthetics</i>, for full mitigation measure text), MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, MM 4.4-18CC, and MM 4.4-20CC.</p>	<p>Less than significant</p>
<p>Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.4-1CC through MM 4.4-7CC and MM 4.4-9CC through MM 4.4-13CC.</p>	<p>Less than significant</p>
<p>Cumulative Impacts</p>	<p>Significant and unavoidable</p>	<p>Implement Mitigation Measures MM 4.1-5CC (see Section 4.1, <i>Aesthetics</i>, for full Mitigation Measure text), and MM 4.4-1CC through MM 4.4-22CC.</p>	<p>Significant and unavoidable</p>
<p>4.5 Cultural Resources</p>			
<p>Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historic or an archaeological resource, as defined in CEQA Guidelines Section 15064.5.</p>	<p>Potentially significant</p>	<p>MM 4.5-1CC: Prior to issuance of building or grading permits, the project proponent/operator shall:</p> <ul style="list-style-type: none"> a. Retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards as published in Title 36, Code of Federal Regulations, Part 61 (36 CFR Part 61) to carry out all Mitigation Measures related to archaeological and historical resources. b. The services of a qualified archaeological monitor and Native American monitor shall be retained by the project proponent/operator to monitor all ground-disturbing activities associated with the construction of the proposed project. The Native American monitor shall be selected from a list of Native American contacts with traditional ties to the project area, provided by the Native American Heritage Commission and/or consultation with Native American tribal groups who may have interest in the project area. The archaeological monitor shall work under the supervision of the qualified archaeologist. c. The qualified archaeologist, archaeological monitor and Native American monitor shall be provided all project documentation related to cultural resources prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to 	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the qualified archaeologist, archaeological monitor and Native American monitor.</p> <p>MM 4.5-2CC: Prior to the issuance of grading or building permits, and for the duration of construction activities, a Construction Worker Environmental and Cultural Awareness Training Program shall be provided to all new construction workers within one week of employment at the project site, laydown area and/or transmission routes. The training shall be prepared and conducted by the qualified archaeologist and may include participation of the Native American monitor. The training may be in video format. The qualified archaeologist shall be available to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must resume when construction activities resume. The training shall include, but not be limited to:</p> <ul style="list-style-type: none"> a. A discussion of applicable cultural resources statues, regulations and related enforcement provisions; b. An overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups, provided by the Native American monitor or tribal leader; c. A summary of the effects of the proposed project on cultural resources; d. Samples or visuals of artifacts that might be found in the project area; e. A discussion of what such artifacts may look like when partially or totally buried and then freshly exposed; f. A discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during construction; g. Instruction that in the event cultural resources are unearched during ground-disturbing activities, the qualified archaeologist, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the site until the qualified archaeologist has evaluated the find, determined whether the find is culturally sensitive, and designs an appropriate short-term and long term treatment plan. The qualified archaeologist, in consultation with the California City 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Community Development Department and Native American Monitor shall establish an appropriate protocols and procedures for minimizing impacts during construction and future impacts during project operation and maintenance;</p> <ul style="list-style-type: none"> h. An informational guide that identifies the reporting procedures in the event of a discovery; i. Other information as deemed necessary by the qualified archaeologist or Native American Monitor; j. An acknowledgement form signed by each working indicating that environmental/ cultural training has been completed; k. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental/ cultural training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are wearing hard hats with the required sticker; l. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the California City Community Development Department. <p>MM 4.5-3CC: In the event archaeological materials are encountered during the course of grading or construction for any construction components, the project contractor shall cease any ground-disturbing activities within 100 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 100-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 qualified archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The qualified archaeologist in consultation with the Native American monitor, if appropriate, 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.</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Per California Environmental Quality Act Guidelines (CEQA) 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 Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the City of California City, which may include data recovery or other appropriate measures. The City of California City shall consult with appropriate Native American representatives in determining appropriate treatment for unearthened cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified 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 California City Community Development Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.</p>	
<p>Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource, as defined in CEQA Guidelines Section 15064.5.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.5-1CC through MM 4.5-3CC.</p>	<p>Less than significant</p>
<p>Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.</p>	<p>Potentially significant</p>	<p>MM 4.5-4CC: 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. The City of California City Community Development Department shall also be notified of the discovery. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). Per PRC Section 5097.98, the project operator 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, as prescribed in this section (PRC Section 5097.98), with the most likely descendent</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		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.	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.5-1CC through MM 4.5-4CC.	Less than significant
4.6 Energy			
Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation.	Less than significant	Implement Mitigation Measure MM 4.3-1CC (see Section 4.3, <i>Air Quality</i> , for full mitigation measure text).	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	Implement Mitigation Measure MM 4.3-1CC (see Section 4.3, <i>Air Quality</i> , for full mitigation measure text).	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.	Potentially significant	MM 4.7-1CC: Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site.	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>a. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to the following:</p> <ol style="list-style-type: none"> 1. Location of fault traces and potential for surface rupture and ground-shaking potential; 2. Maximum considered earthquake and associated ground acceleration; 3. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows; 4. Stability of any existing or proposed cut-and-fill slopes; 5. 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; and, 9. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground and any seismic hazards. <p>b. The project proponent/operator shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid siting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, alternate setback distances may be proposed.</p> <p>c. The final geotechnical study shall be submitted for review and approval by the California City Public Works Department. The California City Public Works Department shall evaluate final facility siting design prior to the issuance of any building or grading permits</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		to verify that geological constraints have been avoided. Final design requirements shall also 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 California City Community Development Department.	
Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.	Less than significant	No mitigation measures are 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 measures are required.	Less than significant
Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.	Potentially significant	Implement mitigation measures MM 4.7-1CC and MM 4.10-2CC (see Section 4.10, <i>Hydrology and Water Quality</i> for full mitigation measure text).	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-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Potentially significant	Implement Mitigation Measure MM 4.7-1CC.	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 direct or indirect risks to life or property.	Potentially significant	Implement Mitigation Measure MM 4.7-1CC.	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 4.7-2CC: Prior to the issuance of any building permit for the operation and maintenance facility, the project operator shall obtain all required permits and approvals from the City of California City, and shall implement all required conditions regarding the design and siting of the septic system(s) and leach field(s).	Less than significant
Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological	Potentially significant	MM 4.7-3CC: Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist shall be retained to prepare and	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>resource or site or unique geologic feature, as defined in CEQA Guidelines Section 15064.</p>		<p>implement a Paleontological Resources Mitigation Plan for the project. A Qualified Paleontologist is an individual who meets the education and professional experience standards as set forth by the Society of Vertebrate Paleontology (2010), which recommends the paleontologist shall have at least a master’s degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. The Paleontological Resources Mitigation Plan shall describe mitigation recommendations in detail, including paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements.</p> <p>MM 4.7-4CC: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology’s Professional Standards (SVP 2010), to carry out all mitigation measures related to paleontological resources.</p> <ol style="list-style-type: none"> 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 California City Community Development Department. The training guide may be presented in video form. b. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements. c. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>d. The Paleontological Resources Awareness Training Guides shall be kept on-site and available for all personnel to review and be familiar with as necessary.</p> <p>MM 4.7-5CC: A qualified paleontologist or designated monitor shall be on-site initially to spot-check excavations below a depth of one-foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall be suspended until an excavation depth of five feet below the ground surface is reached in the area.</p> <p>a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the California City Community Development Department and shall be based on a review of geologic maps and grading plans.</p> <p>1. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the California City Community Development Department, may adjust the level of monitoring to circumstances, as warranted.</p> <p>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.</p> <p>c. Following the completion of construction, 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, recovery and curation efforts, and 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 California City Community Development Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.</p> <p>MM 4.7-6CC: If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		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.	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.7-1CC, MM 4.7-4CC through MM 4.7-6CC and MM 4.10-2CC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant
4.8 Greenhouse Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	No mitigation measures are required.	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.	Less than significant	No mitigation measures are required.	Less than significant
Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.9 Hazards and Hazardous Materials			
Impact 4.9-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	Implement Mitigation Measures MM 4.16-1CC (see Section 4.16, <i>Utilities and Service Systems</i> , for full mitigation measure text). MM 4.9-1CC: 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 City of California City. a. The Hazardous Materials Business Plan shall:	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ol style="list-style-type: none"> 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. <p>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.</p> <p>c. A copy of the approved Hazardous Materials Business Plan shall be submitted to the California City Community Development Department.</p>	
<p>Impact 4.9-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.9-1CC and MM 4.16-1CC (see Section 4.16, <i>Utilities and Service Systems</i>, for full mitigation measure text).</p> <p>MM 4.9-2CC: During project construction and operation, the project proponent/operator shall continuously comply with the following:</p> <ol style="list-style-type: none"> a. The construction contractor or project personnel shall use herbicides that are approved 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. b. Herbicides shall be mixed and applied in conformance with the manufacturer’s directions. 	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife. d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water. e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated. f. A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the California City Community Development Department. 	
<p>Impact 4.9-3: Result in a safety hazard for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Compatibility Plan.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 4.1-6CC and MM 4.1-7CC (see Section 4.1, <i>Aesthetics</i>, for full mitigation measure text).</p> <p>MM 4.9-3CC: Prior to issuance of building and grading permits for portions of the project that meet the Federal Aviation Administration’s noticing requirements, the project proponent/operator shall comply with the following:</p> <ul style="list-style-type: none"> a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17. b. Obtain a Federal Aviation Administration issued “Determination of No Hazard to Air Navigation.” This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 19.08.160 that all project components in the flight area would create no significant military mission impacts. c. Provide documentation to the California City Community Development Department demonstrating that a copy of the final site plan has been provided to the operators of California City Municipal Airport. 	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.9-4: Impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.9-5: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Potentially significant	Implement Mitigation Measure MM 4.13-1CC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measures MM 4.9-1CC through MM 4.9-3CC, MM 4.13-1CC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text), and MM 4.16-1CC (see Section 4.16, <i>Utilities and Service Systems</i> , for full mitigation measure text).	Significant and unavoidable
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	Potentially significant	Implement Mitigation Measure MM 4.9-1CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for mitigation measure text.) MM 4.10-1CC: Prior to issuance of a grading permit and prior to engagement of decommissioning activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan for review and approval by the Regional Water Quality Control Board—Lahontan Region. The Stormwater Pollution Prevention Plan shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving off-site and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the Stormwater Pollution Prevention Plan may include the following: a. Minimization of vegetation removal. b. Implementing sediment controls, including silt fences as necessary. c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas.	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> d. Properly containing and disposing of hazardous materials used for construction on-site. e. Properly covering stockpiled soils to prevent wind erosion. f. Proper protections and containment for fueling and maintenance of equipment and vehicles. g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter. h. Cleanup of silt and mud on adjacent street due to construction activity. i. Checking all lined and unlined ditches after each rainfall. j. Restoring all erosion control devices to working order to the satisfaction of the Lahontan Regional Water Quality Control Board after each rainfall runoff. k. Installing additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise. <p>MM 4.10-2CC: Prior to the issuance of a grading permit, the project proponent/operator shall submit a final hydrologic study and drainage plan for review and approval by the California City Public Works Department. The final hydrologic study and drainage plan shall be designed to evaluate and minimize potential increases in runoff from the project site. The final hydrologic study and drainage plan shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. Numerical stormwater model for the project site, which would evaluate existing and proposed (with project) drainage conditions during storm events ranging up to the 100- year event. b. The study shall consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation. c. The drainage plan would include 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 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on-site or off-site.</p> <p>d. 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 module 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.</p> <p>e. The hydrologic study and drainage plan shall be prepared in accordance with the California City Grading Code, and California City Public Works Department prior to the issuance of grading permits.</p> <p>MM 4.10-3CC: Prior to issuance of a building permit for any on-site water treatment facilities, the project proponent/project operator shall provide evidence of compliance with any applicable Waste Discharge Requirements established by the Lahontan Regional Water Quality Control Board to the California City Public Works Department – Building and Safety Division.</p>	
<p>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.</p>	<p>Less than significant</p>	<p>No mitigation measures are required.</p>	<p>Less than significant</p>
<p>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 which would result in substantial erosion and/or sedimentation on-site or off-site.</p>	<p>Potentially significant</p>	<p>Implementation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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 which would substantially increase the rate or amount of surface runoff which would result in flooding on- or off-site.	Potentially significant	Implement Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.	Less than significant
Impact 4.10-5: 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 which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Implement Mitigation Measures MM 4.10-1CC through MM 4.10-3CC.	Less than significant
Impact 4.10-6: 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 which would impede or redirect flood flows.	Potentially significant	Implement Mitigation Measure MM 4.10-2CC.	Less than significant
Impact 4.10-7: The project would result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	Potentially significant	Implement Mitigation Measures MM 4.9-1CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full Mitigation Measure text),, MM 4.10-1CC, and MM 4.10-2CC.	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.	Potentially significant	Implement Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-1CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full Mitigation Measure text), MM 4.10-1CC, and MM 4.10-2CC.	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.11 Land Use and Planning			
Impact 4.11-1: The project would physically divide an established community.	No Impact	No mitigation measures are required	No Impact
Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigating an environmental effect.	Potentially significant	Implement Mitigation Measure MM 4.9-3CC would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation text).	Less than significant
Cumulative Impacts	Potentially significant	<p>Implementation of Mitigation Measure MM 4.9-3CC would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i>, for full mitigation text).</p> <p>MM 4.11-1CC: Prior to the issuance of any building permit, the project proponent/operator shall provide the California City Community Development Department with a Decommissioning Plan for review and approval. The plan shall be carried out by the proposed operator or a City-contracted consulting firm(s) at a cost to be borne by the project proponent/operator.</p> <p>a. The Decommissioning Plan shall include, but is not limited to, the following:</p> <ol style="list-style-type: none"> 1. Factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land. 2. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. 3. The assumption, when preparing the estimate, is that the project proponent/operator is incapable of performing the work or has abandoned the solar facility, thereby resulting in the City hiring an independent contractor to perform the decommission work. <p>b. In addition to submittal of a Decommissioning Plan, the project proponent/operator shall post or establish and maintain with the City of California City financial assurances related to the deconstruction of the site as identified on the approved Decommissioning Plan should at any point in time the project proponent/operator determine it is not in</p>	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>their best interest to operate the facility. The financial assurances required prior to issuance of any building permit shall be established using one of the following:</p> <ol style="list-style-type: none"> 1. An irrevocable letter of credit; 2. A surety bond; 3. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommissioning plan; or 4. Other financial assurances as reviewed and approved by the California City Community Development Department. <p>c. The financial assurances documents shall include the following verbiage, including any required verbiage through California City Community Development Department’s consultation and review with City Counsel:</p> <ol style="list-style-type: none"> 1. Financial institution or surety company shall give the California City a minimum of 120 days’ notice of intent to terminate the letter of credit or bond. 2. Financial assurances shall be reviewed annually by the respective City-contracted consulting firm(s) at a cost to be borne by the project proponent/operator to substantiate that those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommissioning Plan. 3. Should the project proponent/operator deconstruct the site on their own, the City will not pursue forfeiture of the financial assurance. 4. Financial institution or surety company shall be licensed to conduct business in the state of California. <p>d. Once deconstruction has occurred, financial assurances for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by California City shall be returned to the project proponent/operator.</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>e. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months, that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent/operator, by California City. Within this sixty (60) day period, the property owner, solar field owner, or project proponent/operator may provide California City a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Department 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.</p> <p>f. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned.</p> <p>MM 4.11-2CC: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.</p>	
4.12 Noise			
<p>Impact 4.12-1: The project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.</p>	<p>Potentially significant</p>	<p>MM 4.12-1CC: To reduce temporary construction-related noise impacts, the following shall be implemented by the project proponent/operator:</p> <p>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.</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>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. The construction contractor shall establish a Noise Disturbance Coordinator for the proposed 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 California City Community Development Department prior to commencement of any ground disturbing activities. <li>c. During all construction or decommissioning phases of the proposed project located within the limits of California City, the construction contractor shall limit all onsite noise-producing activities to the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year or as required through Section 5-1.407 of the California City Municipal Code. <li>d. If construction-related activities must occur outside of permitted hours per Section 5-1.407 of the California City Municipal Code, the project proponent/operator shall file an application with the Health Officer for a variance. The project proponent/operator shall set forth actions taken to comply with the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for accomplishment. The application shall be accompanied by a fee in the amount established from time to time by resolution. A separate application shall be filed for each noise source. Several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of the application and fee, the Health Officer shall refer it with a recommendation within 30 days to the Planning Commission. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> e. 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). f. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency). g. 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. <p>MM 4.12-2CC: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice.</p> <ul style="list-style-type: none"> a. The mailing notice shall be to all residences within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include: the construction schedule, 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 California City Community Development Department. 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.12-2: The project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12-4: The project would expose people residing or working in the project area to excessive noise levels, for a project located within the Kern County Airport Land Use Compatibility Plan.	Potentially significant	Implement Mitigation Measure MM 4.9-3CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full text).	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-3CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full text) and MM 4.12-1CC through MM 4.12-2CC.	Less than significant
4.13 Public Services			
Impact 4.13-1: 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.	Potentially significant	<p>MM 4.13-1CC: Prior to the issuance of grading or building permits, the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation, and decommissioning.</p> <p>The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the California City Fire Department for review and approval. A copy of the approved fire safety plan shall be submitted to the California City Community Development Department prior to the issuance of any building permit or grading permits. The fire safety plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:</p> <ol style="list-style-type: none"> a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) mufflers in good condition. 	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> c. Fire rules shall be posted on the project bulletin board at the contractor’s field office and in 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 restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel. g. Building plans shall be included for the energy storage system to verify adherence to City and California Building Code standards. <p>MM 4.13-2CC: The following Cumulative Impact Charge shall be implemented as payment on approved Conditional Use Permit acreage.</p> <ul style="list-style-type: none"> a. Submittal of Building Permit and Phasing <ul style="list-style-type: none"> 1. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification. 2. The map for either the total project or a phase shall calculate the Cumulative Impact Charge net acreage as follows: <ul style="list-style-type: none"> 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 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>3. Formula: Net Acreage = (2)A minus the sum of [(2)B + (2)C + (2)D].</p> <p>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.</p> <p>5. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map.</p> <p>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.</p> <p>b. Calculation and Payment of Cumulative Impact Charge</p> <p>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.</p> <p>2. Any acres denoted for an operation and maintenance building or energy storage that are not built, cannot be used for solar panels unless payment is provided for the Cumulative Impact Charge.</p> <p>MM 4.13-3CC: Written verification of ownership of the project shall be submitted to the California City Community Development 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 California City Finance Department and labeled “Supplemental Cumulative Impact Charge (SCIC)” with the project name and phase number.</p> <p>MM 4.13-4CC: The project proponent/operator shall work with the City to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily</p>	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>limited to, the project proponent/operator obtaining a street address within the incorporated territory of California City 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 California City 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 California City. The project proponent/operator shall allow the City to use this sales tax information publicly for reporting purposes.</p> <p>MM 4.13-5CC: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.</p>	
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.9-4CC (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text), and MM 4.13-1CC through MM 4.13-5CC	Less than significant
4.14 Transportation			
Impact 4.14-1: The project would conflict with an applicable plan, ordinance or policy establishing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.14-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.14-3: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous	Potentially significant	<p>MM 4.14-1CC: Prior to the issuance of construction or building permits, the project proponent/operator shall:</p> <p>a. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize</p>	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>intersections) or incompatible uses (e.g., farm equipment).</p>		<p>County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved Construction Traffic Control Plan and issued permits shall be submitted to the California City Community Development Department, and California City Public Works Department, prior to the commencement of construction or decommissioning activities.</p> <p>b. Enter into a secured agreement with California City to ensure that any City-maintained 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 California City.</p> <p>c. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department - Development Review Division and the California Department of Transportation offices for District 9, as appropriate. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation <i>Manual on Uniform Traffic Control Devices</i> and <i>Work Area Traffic Control Handbook</i> and must include, but not be limited to, the following issues:</p> <ol style="list-style-type: none"> 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, but not limited to, 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; 	

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> 7. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible. d. Institute construction work hours as necessary, such that the arrival and/or departure times of workers would be staggered as necessary. e. Identifying vehicle safety procedures for entering and exiting site access roads. f. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-County maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the California City Community Development Department, and California City Public Works Department. g. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to California City. This information shall be submitted in electronic format. California City, in consultation with the project proponent/operator’s engineer, shall determine the extent of remediation required, if any. 	
<p>Impact 4.14-4: The project would result in inadequate emergency access.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measure MM 4.14-1CC.</p>	<p>Less than significant</p>
<p>Cumulative Impacts</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measure MM 4.14-1CC.</p>	<p>Less than significant</p>

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.15 Tribal Cultural Resources			
Impact 4.15-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historic Places, or in a local register of historical resources as defined in Public Resources Section 5020.1(k).	Potentially significant	Implement Mitigation Measures MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, Cultural Resources, for full mitigation measure text).	Less than significant
Impact 4.15-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Potentially significant	Implement Mitigation Measures MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, Cultural Resources, for full mitigation measure text).	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, Cultural Resources, for full mitigation measure text).	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.16 Utilities and Service Systems			
Impact 4.16-1: 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 telecommunication facilities, the construction or relocation of which could cause significant environmental effects.	Potentially significant	Implement Mitigation Measure MM 4.10-2CC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text.)	Less than significant
Impact 4.16-2: The project would have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.16-3: The project would generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals.	Potentially significant	<p>MM 4.16-1CC: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.</p> <ul style="list-style-type: none"> a. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, 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 on-site Recycling Coordinator shall also be responsible for ensuring waste requiring special disposal are handled according to state local regulations that are in effect at the time of disposal. d. Contact information of the coordinator shall be provided to the California City Community Development Department prior to issuance of building permits. e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations, and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site. 	Less than significant

Table 1-8. Summary of Impacts, Mitigation Measures, and Levels of Significance – California City, continued

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.16-4: The project would not comply with federal, State, and Local management and reduction statutes and regulations related to solid waste.	Potentially significant	Implement Mitigation Measure MM 4.16-1CC.	Less than significant
Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.10-1CC, MM 4.10-2CC (see Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text), and MM 4.16-1CC.	Less than significant
4.17 Wildfire			
Impact 4.17-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant	Implement Mitigation Measure MM 4.14-1CC (see Section 4.14, <i>Traffic and Transportation</i> , for full mitigation measure text).	Less than significant
Impact 4.17-2: The project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.	Potentially significant	Implement Mitigation Measure MM 4.13-1CC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Impact 4.17-3: 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	Implement Mitigation Measure MM 4.13-1CC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Cumulative Impacts	Significant and unavoidable	Implement Mitigation Measure MM 4.13-1CC (see Section 4.13, <i>Public Services</i> , for full mitigation measure text).	Significant and unavoidable

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 Kudu Solar Project (project). The project proponent proposes to develop a photovoltaic solar facility and energy storage system capable of producing up to 500 megawatts (MW) of alternating current (AC) power, and 600 MW hours of storage capacity on approximately 1,955.13 acres of privately owned land within unincorporated Kern County and the City of California City.

The project would be supported by a 230 kV overhead and/or underground electrical transmission line(s) (gen-ties) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. The proposed project intends to share the Eland 1 Solar Project gen-tie line and right-of-way (ROW), which may require stringing additional line on the Eland 1 transmission structures, or increasing the capacity of the Eland 1 gen-tie by reconductoring the line with thicker cable. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the Eland 1 Solar Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029). The project's permanent facilities would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, inverter stations, energy storage system(s), and operations and maintenance facilities.

The project would require approval of General Plan Amendments to the Circulation Element of the Kern County General Plan; changes in zone classifications for the project site from A-1 (Limited Agriculture), A-1 MH (Limited Agriculture, Mobile Home Combining), PL RS (Platted Lands, Residential Suburban Combining) and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A (Exclusive Agriculture); and a conditional use permit (CUP) to allow for the construction and operation of a solar energy electrical facility and battery energy storage system. The project would also require a CUP from California City for the construction of a utility-scale solar facility on parcels designated as O/RA (Controlled Development & Open Space) in the General Plan and zoned O/RA (Open Space/Residential/Agricultural) in the City's Zoning Regulations. The project is described in detail in Chapter 3, *Project Description*.

This EIR has been prepared pursuant to the following:

- CEQA (Public Resources Code, Section 21000 et seq.);
- *CEQA Guidelines* (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000 et seq.); and,
- Kern County CEQA Implementation Document

The overall purpose of the CEQA process is to:

- Ensure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns.
- Identify the significant effects to the environment of a project, identify alternatives and indicate the manner in which those significant effects can be avoided or mitigated;
- 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; and,
- Provide a forum for public participation in the decision-making process with respect to environmental effects.

2.2 Purpose of this Environmental Impact Report

An EIR is a public informational document used in the planning and decision-making process. 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. As a legislative action, the final decision is made by the Kern County and California City Board of Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

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

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

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

Issues to be Resolved

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

- Determine whether the Draft EIR adequately describes the environmental impacts of the project;

- Identify the preferred choice among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified; and
- Determine whether additional mitigation measures need to be applied to the proposed project.

2.3 Terminology

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

- *Project* means the whole of an action that has the potential for resulting in a physical change in the environment, directly or indirectly.
- *Environment* refers to the physical conditions that exist in the area and that would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and man-made (artificial) conditions.
- *Impacts* analyzed under CEQA must be related to a physical change. Impacts are:
 - Direct or primary impacts that would be caused by the proposed project and would occur at the same time and place; or
 - Indirect or secondary impacts that would be caused by the proposed 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 proposed 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 proposed project's significant environmental impacts by:
 - Avoiding the impact altogether by not taking a certain action or parts of an action;
 - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
 - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
 - Compensating for the impact by replacing or providing substitute resources or environments.

- *Cumulative impacts* are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
 - The individual impacts may be changes resulting from a single project or separate projects.
 - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over time.

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

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

2.4 Decision-Making Process

CEQA requires lead agencies 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 proposed project and with an opportunity to provide comments. In accordance with CEQA, the following is the process for public participation in the decision-making process:

- **Notice of Preparation (NOP)/Initial Study (IS).** Kern County prepared and circulated an NOP/IS for 30 days to responsible, trustee, and local agencies for review and comment beginning on September 15, 2020, and ending on October 15, 2020.
- **Draft EIR Preparation.** A Draft EIR is prepared, incorporating public and agency responses to the NOP/IS and the scoping process. The Draft EIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per Section 15105 of the *CEQA Guidelines*, Kern County will provide for a 45-day public review period on the Draft EIR. Kern County will subsequently respond to each comment on the Draft EIR received in writing through a Response to Comments chapter in the Final EIR. The Response to Comments will be provided to each agency or person who provided written comments on the EIR a minimum of 10 business days before the scheduled Planning Commission hearing on the Final EIR and project.

- **Preparation and Certification of Final EIR.** The Kern County Planning Commission will consider the Final EIR and the project, acting in an advisory capacity to the Kern County Board of Supervisors. Upon receipt of the Planning Commission's recommendation, the Board of Supervisors will also consider the Final EIR and all public comments received, and take final action on the project. At least one public hearing will be held by both the Planning Commission and Board of Supervisors to consider the Final EIR, take public testimony, and then approve, conditionally approve, or deny the project. California City will be a CEQA responsible agency pursuant to *CEQA Guidelines* Section 15381 for approvals of those portions of the project located within California City jurisdictional boundaries.

Notice of Preparation/Initial Study

Pursuant to Section 15082 of the *CEQA Guidelines*, as amended, the Kern County Planning and Natural Resources Department circulated a NOP/IS to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning September 15, 2020, and ending on October 15, 2020. The NOP/IS was also posted in the Kern County Clerk's office for 30 days and sent to the State Clearinghouse at the Governor's Office of Planning and Research to solicit statewide agency participation in determining the scope of the EIR.

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

Scoping Meeting

Pursuant to Section 15082 (c)(1) of the *CEQA Guidelines*, for projects of statewide, regional, or area-wide significance, the lead agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. In compliance with the Governor's Executive Order, the California Department of Public Health's guidelines on gatherings regarding COVID-19, and Kern County Local Emergency Declaration, the scoping meeting required by the CEQA Guidelines, Kern County hosted a virtual scoping meeting at 1:30 PM on Friday, October 2, 2020 through the MS Teams online application.

Notice of Preparation/Initial Study and Scoping Meeting Results

Specific environmental concerns raised in written comments received during the NOP/IS public review period are discussed below. The NOP/IS and all comments received are included in Appendix A, along with the Summary of Proceedings from the scoping meeting.

Notice of Preparation/Initial Study Written Comments

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

Table 2-1. Summary of Notice of Preparation/Initial Study Comments

Commenter/Date	Summary of Comment
State Agencies	
California Department of Transportation District 9 September 29, 2020	<p>The commenter states that the EIR's evaluation of potential impacts on the roadway system from construction-related trips should address the need for a traffic management plan and the adequacy of the Phillips Road/State Route 14 intersection for geometrics, queuing, etc.</p> <p>The commenter states that details concerning a required encroachment permit for gen-tie crossings of SR 14 can be found in Section 600 Utility Permits of the Encroachment Permit Manual.</p>
California Department of Fish and Wildlife October 15, 2020	<p>The commenter identifies its role in this EIR process as both a Responsible Agency and a Trustee Agency and requests that the EIR fully identify potential impacts to biological resources, including to special-status species. To do this, focused biological surveys should be conducted by a qualified wildlife biologist/botanist during the proper protocol survey periods. Potential sensitive wildlife species of concern that are noted include desert tortoise, desert kit fox, Mohave ground squirrel, western Joshua tree, burrowing owl, American badger, Le Conte's thrasher, and loggerhead shrike. Sensitive plant species of concern that are noted include alkali mariposa-lily, Barstow wooly sunflower, desert cymopterus, crowned muilla, and white pygmy-poppy. Impacts to birds and other non-listed plants and animals are noted as well.</p> <p>The commenter requests that the project's impacts to lakes and/or streams should be adequately described in order for CDFW to issue a Lake or Streambed Alteration Agreement. The commenter identifies several potential mitigation measures that could be considered and requests that all data produced during site surveys that have detected special-status species and natural communities of the project site be provided to CDFW for inclusion in the CNDDDB (California Natural Diversity Database).</p>
Local Agencies	
Eastern Kern Air Pollution Control District September 17, 2020	The commenter notes that the project must comply with District rules and procedures for fugitive dust control during construction and with the 2017 Ozone Containment plan.
Kern County Department of Agriculture September 28, 2020	The commenter states that the applicant needs to determine if the project is subject to provisions of California Desert Native Plants Act.
Kern County Public Health Services Department, Environmental Health Division September 29, 2020	<p>The commenter requires the applicant register with the California Environmental Reporting System (CERS). In addition, the method of water supply and sewage disposal for the proposed project shall be approved by Kern County Environmental Health Division.</p> <p>The commenter requests that if any abandoned wells are found during the grading and construction process, the applicant must contact the Land and Water Division for permitting and destruction procedures.</p>

Table 2 1. Summary of Notice of Preparation/Initial Study Comments, continued

Commenter/Date	Summary of Comment
Interested Parties	
Defenders of Wildlife and Desert Tortoise Council October 2, 2020	<p>The commenter states that the proposed project is within the range of Agassiz’s desert tortoise and notes that signs of this tortoise were found in the western parts of the project site. The commenter asks that the results of focused surveys and observations be included in the Draft EIR, that appropriate mitigation measures be developed to avoid or compensate for impacts, and that the applicant obtain an incidental take permit from the United States Fish and Wildlife Service and the California Department of Fish and Wildlife.</p> <p>The commenter states that the proposed project is within range of the Mohave ground squirrel, some of which were captured during surveys. The commenter asks for maps to be included in the Draft EIR that show differing habitat types to assist in determining the acreage of habitat that will need to be compensated due to the proposed project. The Draft EIR should also include measures to avoid, minimize, or compensate for unavoidable impacts.</p> <p>The commenter states that the project is located within or adjacent to a desert habitat linkage identified in the Desert Renewable Energy Conservation Plan. This Draft EIR should analyze if the proposed project would impact this linkage and, if so, identify alternative configurations of the linkage.</p>
Catherine Ngo October 6, 2020	The commenter states that she has not signed or entered into an agreement to use of her land. The property in question lies outside the project boundary.
Kern Audubon Society October 10, 2020	<p>The commenter requests that the Draft EIR identify and evaluate potential adverse impacts to protected species that may utilize the desert saltbush scrub areas that exist in the project site. The undeveloped areas in the project site, such as the saltbush scrub, have potential to support desert kit fox, American badger, western burrowing owl, Swainson’s hawk, Mohave ground squirrel, and desert tortoise.</p> <p>The commenter states that a biological site evaluation should be done by a qualified biological consultant using appropriate protocols and performed during the appropriate time of year to discern species presence. This evaluation should also incorporate the project’s potential to enhance and support raven populations that depredate the endangered desert tortoise. The commenter notes an additional concern of the project’s location along the eastern edge of the Sierra Flyway, a major migratory path for millions of migrating birds each year.</p>
Mojave Air and Space Port October 14, 2020	The commenter states that transmission lines associated with solar projects have been constructed in the approach to MHV Runway 30 and protected airspace. The commenter is concerned that the potential location of new overhead transmission lines associated with the proposed project could result in new, cumulative, or synergistic effects to navigable airspace.

Availability of the Draft EIR

This Draft EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the *CEQA Guidelines*. This Draft EIR and the full administrative record for the project, including all studies, are

available for review during normal business hours Monday through Friday at the Kern County Planning and Natural Resources Department, located at:

Kern County Planning and Natural Resources Department

2700 “M” Street, Suite 100

Bakersfield, CA 93301-237

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 Draft EIR is available at the following library:

Kern County Library/Beale

Local History Room

701 Truxtun Avenue

Bakersfield, CA 93301

2.5 Format and Content

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

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

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

- Mineral Resources
- Population and Housing
- Recreation

The NOP/IS determined that the proposed project area does not contain mineral resources of regional or statewide significance, nor is the project site designated by the Kern County General Plan or the California Department of Conservation, Geologic Energy Management Division for mineral resources activities; therefore, the project would not have an impact on mineral resources. The proposed project would only require up to 20 full-time equivalent (FTE) personnel, which the local housing stock would be adequate to accommodate should they relocate to the area. The proposed project would not directly or indirectly induce substantial unplanned growth and it would not displace any persons or housing as the project site does not contain any existing housing units. Even if the 20 FTE personnel 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 or cause a substantial increase in the number of users at local parks or recreational facilities and would therefore not cause substantial physical deterioration of recreational facilities.

Additionally, no comments were received during circulation of the NOP/IS indicating that the lead agency's determination of no impact to those identified resources was inappropriate. No further discussion of these topics is warranted. For a complete analysis of these impacts, please refer to Appendix A of this EIR.

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
Introduction (Section 15132)	Chapter 2
Project description (Section 15124)	Chapter 3
Significant environmental impacts (Section 15126.2)	Sections 4.1 - 4.17
Environmental setting (Section 15125)	Sections 4.1 - 4.17
Mitigation measures (Section 15126.4)	Sections 4.1 - 4.17
Cumulative impacts (Section 15130)	Sections 4.1 - 4.17
Growth-inducing impacts (Section 15126.2)	Chapter 5
Effects found not to be significant (Section 15128)	Chapters 1 and 5
Significant irreversible changes (Section 15126.2)	Chapter 5
Unavoidable significant environmental impacts (Section 15126.2)	Chapter 5
Alternatives to the project (Section 15126.6)	Chapter 6
Responses to comments (Section 15132)	Chapter 7

Requirement (CEQA Guidelines Section)	Location in EIR
Organizations and persons consulted (Section 15129)	Chapter 8
List of preparers (Section 15129)	Chapter 9
Bibliography (Section 15129)	Chapter 10

The content and organization of this Draft 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 Draft EIR is organized into the following sections:

- Chapter 1, *Executive Summary*, provides a 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, objectives, and the relationship of the project to other plans and policies.
- Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, contains a detailed environmental analysis of the existing conditions, project impacts, mitigation measures, and cumulative impacts.
- Chapter 5, *Consequences of Project Implementation (Mandatory CEQA Sections)*, 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 project that could reduce the significant environmental effects that cannot be avoided.
- Chapter 7, *Responses to Comments*, is reserved for responses to comments on this Draft EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.
- Chapter 9, *Preparers*, identifies persons involved in the preparation of the EIR.
- Chapter 10, *Bibliography*, identifies reference sources for the EIR.
- *Appendices* provide information and technical studies that support the environmental analysis contained within the EIR.

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

- “Introduction” provides a brief overview on the purpose of the section being analyzed with regard 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 project in each category, presents the determination of the level of significance, and discusses the feasible mitigation measures to reduce any impacts.
- “Cumulative Setting, Impacts, and Mitigation Measures” discusses 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 Sections 15381 and 15386 of the *CEQA Guidelines*, as amended, responsible agencies and trustee agencies are defined as follows:

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

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

Federal Agencies

- US Fish and Wildlife Service (USFWS)
- US Environmental Protection Agency (EPA)
- US Army Corps of Engineers (USACE)
- Bureau of Land Management (BLM)
- Federal Aviation Administration (FAA)

State Agencies

- Governor’s Office of Planning and Research (OPR)
- California Air Resources Board (CARB)
- California Energy Commission (CEC)
- California Public Utilities Commission (CPUC)

- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans), District 9
- California Native American Heritage Commission (NAHC)
- Lahontan Regional Water Quality Control Board (RWQCB)

Local Agencies

- California City (see below)
- Eastern Kern Air Pollution Control District (EKAPCD)
- Kern Council of Governments (KCOG)

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

Kern County

- Planning and Natural Resources Department
- Public Works Department
- Public Works Department, Operations & Maintenance Division Recycling Programs
- Public Health Services Department, Environmental Health Division
- Fire Department
- Sheriff's Department

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

City of California City

The City of California City will be a CEQA responsible agency pursuant to CEQA *Guidelines* Section 15381 for approvals of those portions of the project located within California City jurisdictional boundaries. This EIR identifies mitigation measures specific to the City of California City, which have been denoted with the suffix, "CC." The proposed project will require permits or approvals from the following City of California City departments:

- Community Development Department
- Public Works Department
- Fire Department
- Police Department
- California City Airport

Other additional permits or approvals from the City of California City may be required for the project.

2.7 Incorporation by Reference

In accordance with Section 15150 of the *CEQA Guidelines* to reduce the size of the report, the following documents are hereby incorporated by reference into this Draft 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.

Kern County General Plan and Program EIR

The Kern County General Plan is a policy document with land use maps and related information that is 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. A Recirculated Program EIR was certified for the General Plan in 2004.

Fremont Interim Rural Community Plan

The Fremont Interim Rural Community Plan assigns land use designations to the unincorporated community of Fremont. A formal text plan for this area has not yet been adopted; therefore, the goals and policies of the Kern County General Plan shall be the governing tool for any development within this community plan area.

Kern County Zoning Ordinance

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

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

- Establish requirements for off-street parking;
- Regulate signs and billboards; and
- Provide for the enforcement of the regulations of Chapter 19.02, *General Provisions*.

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG), and was adopted on August 16, 2018. The 2018 RTP is a 26-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas 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, ensuring consistency between low-income housing need and transportation planning. Kern COG is a federally designated Metropolitan Planning Organization and a state designated Regional Transportation Planning Agency (RTPA). These designations formally establish Kern COG's role in transportation planning. Preparing an RTP is one of Kern COG's primary statutory responsibilities under federal and state law.

Kern County Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan (ALUCP) was originally adopted in 1996 and has since been amended to comply with Aeronautics Law, Public Utilities Code (Chapter 4, Article 3.5) regarding public airports and surrounding land use planning. As required by that law, proposals for public or private land use developments that occur within defined airport influence areas are subject to compatibility review. The principal airport land use compatibility concerns addressed by the plan are: (1) exposure to aircraft noise, (2) land use safety with respect to both people and property on the ground and the occupants of aircraft, (3) protection of airport air space, and (4) general concerns related to aircraft overflights.

The ALUCP identifies policies and compatibility criteria for influence zones or planning area boundaries. The ALUCP maps and labels these zones as A, B1, B2, C, and D, ranging from the most restrictive (A – airport property-runway protection zone) to the least restrictive (D – disclosure to property owners only). As required by law, the following affected cities have adopted the ALUCP for their respective airports: Bakersfield, California City, Delano, Shafter, Taft, Tehachapi, and Wasco. The southern portion of the proposed project would be located within the Airport Influence Areas of the California City Municipal Airport. Specifically, the southern portions of Site 2 of the proposed project are located within two compatibility zones, B1 (Approach/Departure Zone) and C (Common Traffic Pattern) of the California City Municipal Airport.

California City General Plan

The California City 2009-2028 General Plan, adopted on October 6, 2009, projects conditions and needs into the future in order to determine the long-term goals and policies that would provide the basis for decision-making related to the growth and development of the city and within its existing coterminous sphere of influence. The General Plan implements the city's vision through its goals, policies, and implementation measures.

Pursuant to Government Code Section 65300, the California City General Plan consists of the following General Plan elements: Land Use, Circulation, Housing, Noise, Safety, and Conservation/Open Space. Each element establishes goals, policies, and implementation measures that guide planning decisions in the city.

California City Zoning Regulations

Title 9, Chapter 2 of the California City Municipal Code provides a description of permitted and conditional uses for the various zoning classifications within the city. The intent of the Zoning Regulations is to preserve, protect, and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare.

Eland 1 Solar Project Supplemental Environmental Impact Report

The project would include a 230 kV overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. The project intends to share the Eland 1 Solar Project gen-tie option routes and right-of-way (ROW) previously analyzed in the approved Eland 1 Solar Project Supplemental Environmental Impact Report (SEIR) (State Clearinghouse No. 2012011029) (ESA 2019), which addresses construction, operation, and decommissioning impacts of the gen-tie option routes that interconnect at the Barren Ridge Substation. As a result, this EIR incorporates the Eland 1 Solar Project SEIR by reference, and the analysis of potential impacts and any resulting mitigation measures identified to reduce such effects are not included herein.

CEQA Guidelines Section 15150 prescribes the conditions and requirements to satisfy when an EIR may incorporate by reference another document as in this case. In accordance with *CEQA Guidelines Section 15150, Incorporation by Reference*:

(a) An EIR or Negative Declaration may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the text of the EIR or Negative Declaration.

This EIR incorporates Eland 1 Solar Project Supplemental Environmental Impact Report (SEIR) (State Clearinghouse No. 2012011029). The Draft SEIR was circulated for public review in December 2018 and was certified on April 19, 2019. The SEIR is currently available to the public on the Kern County Planning and Natural Resources Department website at kernplanning.com/environmental-doc/eland-1-solar-project/.

(b) Where part of another document is incorporated by reference, such other document shall be made available to the public for inspection at a public place or public building. The EIR

or Negative Declaration shall state where the incorporated documents will be available for inspection. At a minimum, the incorporated document shall be made available to the public in an office of the Lead Agency in the county where the project would be carried out or in one or more public buildings such as county offices or public libraries if the Lead Agency does not have an office in the county.

As mentioned, the Draft SEIR was circulated for public review in December 2018 and was certified on April 19, 2019. The SEIR is currently available to the public on the Kern County Planning and Natural Resources Department website at kernplanning.com/environmental-doc/eland-1-solar-project/.

(c) Where an EIR or Negative Declaration uses incorporation by reference, the incorporated part of the referenced document shall be briefly summarized where possible or briefly described if the data or information cannot be summarized. The relationship between the incorporated part of the referenced document and the EIR shall be described.

The project intends to share the Eland 1 Solar Project gen-tie option routes and associated ROW previously analyzed in the Eland 1 Solar Project SEIR.

(d) Where an agency incorporates information from an EIR that has previously been reviewed through the state review system, the state identification number of the incorporated document should be included in the summary or designation described in subdivision (c).

As mentioned, the Eland 1 Solar Project Supplemental Environmental Impact Report (SEIR) was previously reviewed through the state review system, and been assigned State Clearinghouse No. 2012011029.

CEQA Guidelines Section 15150 contains items (e) and (f), which consist of a non-exclusive list of examples of materials that may be incorporated by reference and general guidance of data to incorporate, respectively. Since these two items do not provide required conditions for incorporation, they not discussed further.

2.8 Sources

This Draft EIR is dependent upon information from many sources. Some sources are studies or reports that have been prepared specifically for this document. 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 Draft EIR are listed in Chapter 10, *Bibliography*, and are available for review during normal business hours at:

Kern County Planning and Natural Resources Department
2700 “M” Street, Suite 100
Bakersfield, CA 93301-237

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

3.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), which is the CEQA Lead Agency, to identify and evaluate environmental impacts associated with implementation of the Kudu Solar Project (proposed project) by 69SV 8ME LLC (project proponent). The project proponent proposes to develop a photovoltaic (PV) solar facility and energy storage system capable of producing up to 500 megawatts (MW) of alternating current (AC) power, and 600 MW hours of storage capacity on approximately 1,955.13 acres of privately owned land within unincorporated Kern County and the City of California City. 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), inverter stations, and operations and maintenance facilities.

The project would include a 230 kV overhead and/or underground generation-tie (gen-tie) line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. The proposed project intends to share the previously approved Eland 1 Solar Facility's (also referred to as Eland 1 Solar Project) gen-tie line and right-of-way (ROW), which may require stringing additional conductor on the Eland 1 Solar Facility's transmission structures, or increasing the capacity of Eland 1 Solar Facility's gen-tie by reconductoring the line with thicker cable. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the approved Eland 1 Solar Project Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029) (ESA 2019).

The project would require approval of General Plan Amendments to the Circulation Element of the Kern County General Plan; changes in zone classifications for the project site from A-1 (Limited Agriculture), A-1 MH (Limited Agriculture, Mobile Home Combining), PL RS (Platted Lands, Residential Suburban Combining), and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A (Exclusive Agriculture); and a conditional use permit (CUP) to allow for the construction and operation of a solar energy electrical facility and battery energy storage system. The project would also require a CUP from California City for the construction of a utility-scale solar facility on parcels designated as O/RA (Controlled Development, Public Parks and Recreation or Public Schools) in the General Plan and zoned O/RA (Open Space/Residential/Agricultural) in the City's Zoning Ordinance.

3.2 Project Location

The proposed Kudu Solar Project site is located in portions of unincorporated Kern County and the City of California City, north of the California City Municipal Airport (Figure 3-1, *Vicinity Map*). The project area is adjacent to the previously approved Eland 1 Solar Project and south of the existing Springbok 1 & 2 Solar Projects. The Kudu Solar Project would potentially share infrastructure with the Eland 1 Solar Project, including but not limited to substations and gen-tie lines. The majority of the project site is bisected to the east-west by Washburn Boulevard (which is also the Kern County/California City limit line) and to the north-south by Neuralia Road. State Route 14, a four-lane divided highway located approximately one mile to the

west, provides regional access to the project site. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site. The proposed project boundaries are illustrated in Figure 3-2, *Project Site Boundaries*. Refer also to Figure 3-3, *Aerial Photograph*, and Figure 3-4A, *Parcel Map*.

According to the US Geological Survey (USGS), the project site is located on the California City North and Mojave North East 7.5 minute USGS Quadrangles at Township 31S, Range 37E – portions of Sections 14, 15, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and Township 32S, Range 37E – portions of Sections 1, 2, 3, 4, 9, 10, 11, 12.

The project site consists of five sites (Sites 1 through 5) on 75 parcels located in unincorporated Kern County and the City of California City; refer to Figures 3-4B to 3-4F. A total of 42 project parcels (totaling approximately 673.60 gross acres) are located within unincorporated Kern County, and 33 project parcels (totaling approximately 1,281.53 gross acres) are located within the jurisdictional limits of California City. The project is located within the boundaries of the Kern County General Plan, the Fremont Interim Rural Community Plan, and the City of California City General Plan (California City 2009). Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage*, below, identifies the 75 individual assessor parcel numbers (APN), their respective acreages, general plan designations, and existing and proposed zoning designations.

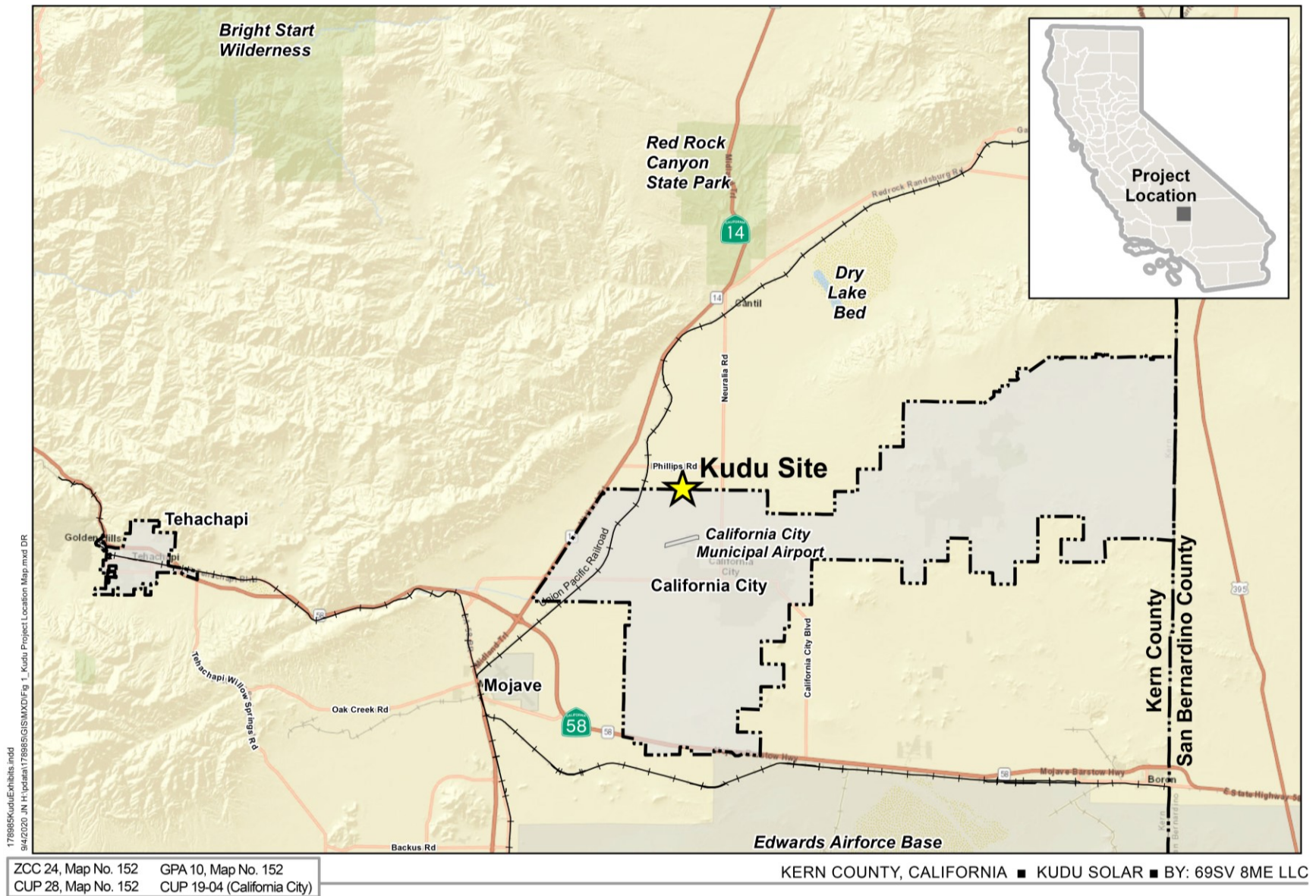


Figure 3-1. Vicinity Map

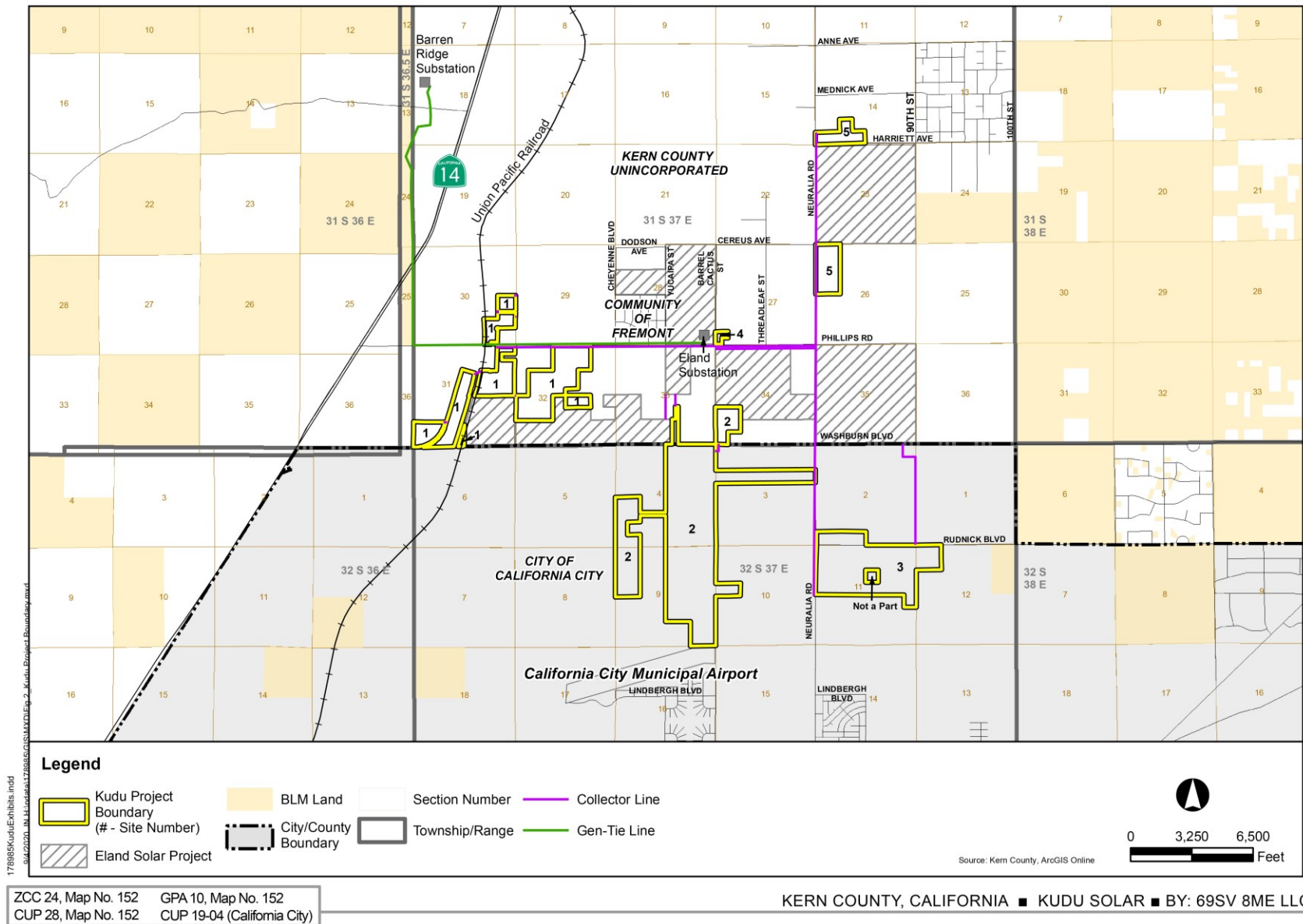


Figure 3-2. Project Site Boundaries

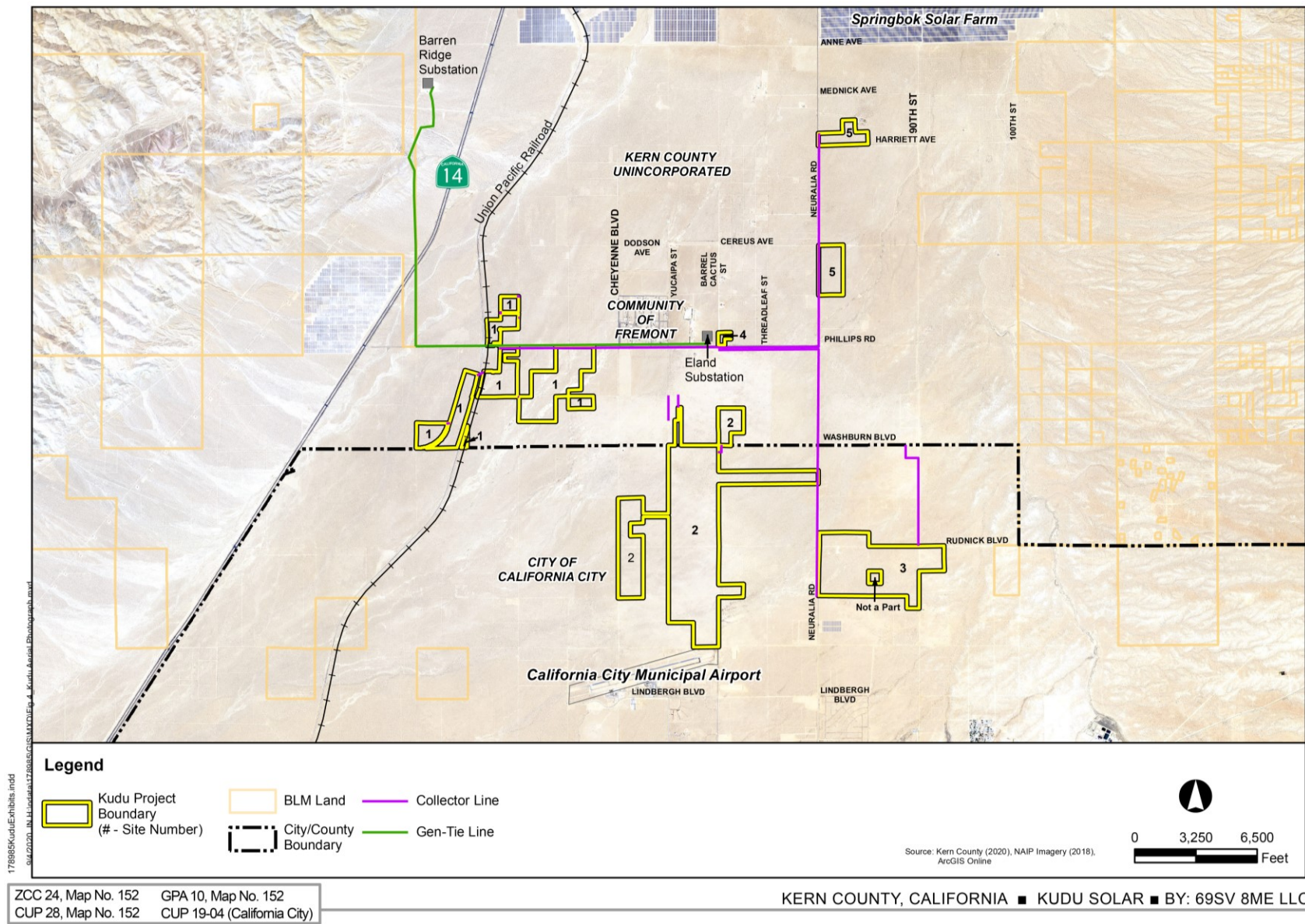


Figure 3-3. Aerial Photograph

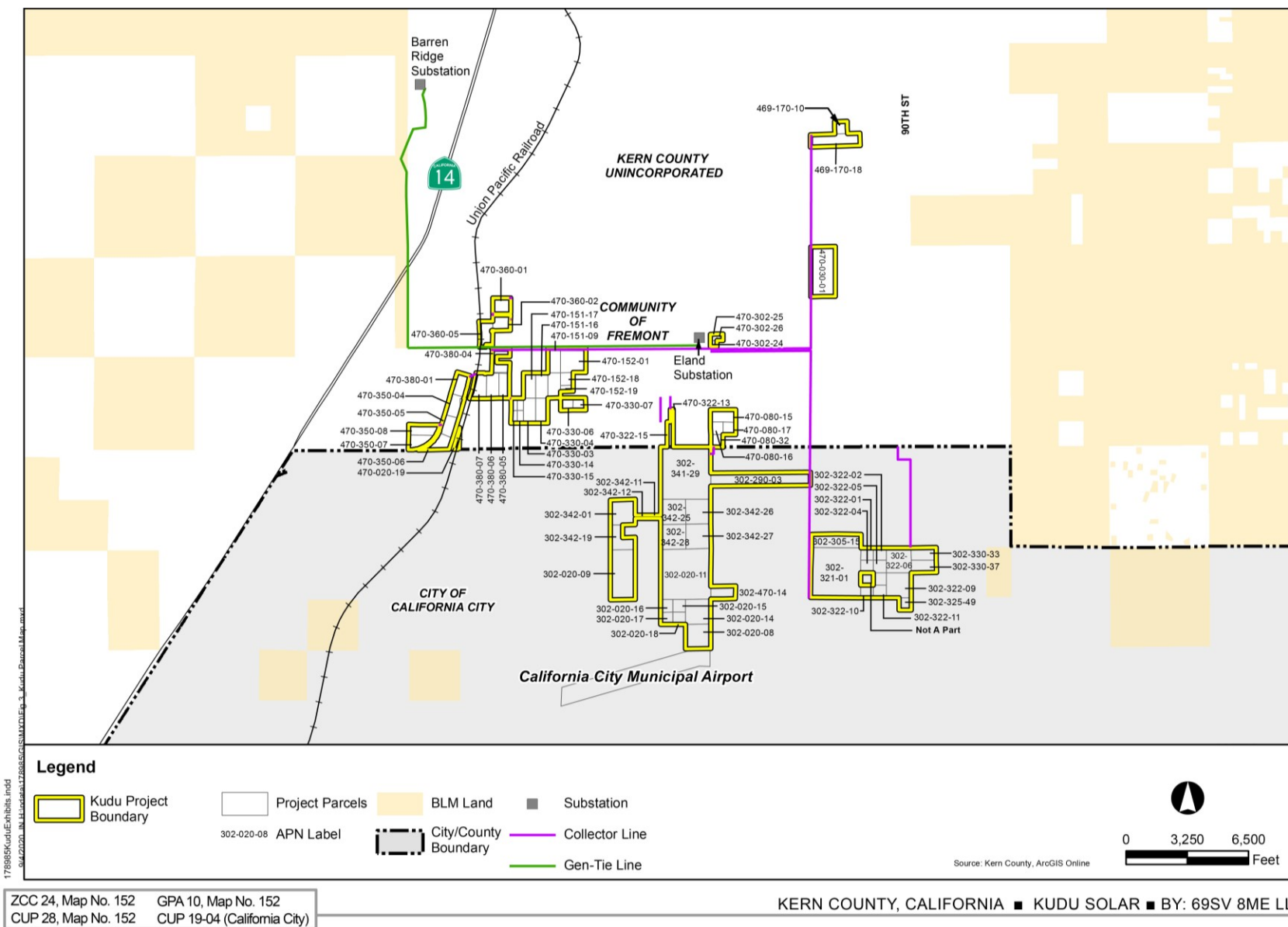


Figure 3-4A. Parcel Map

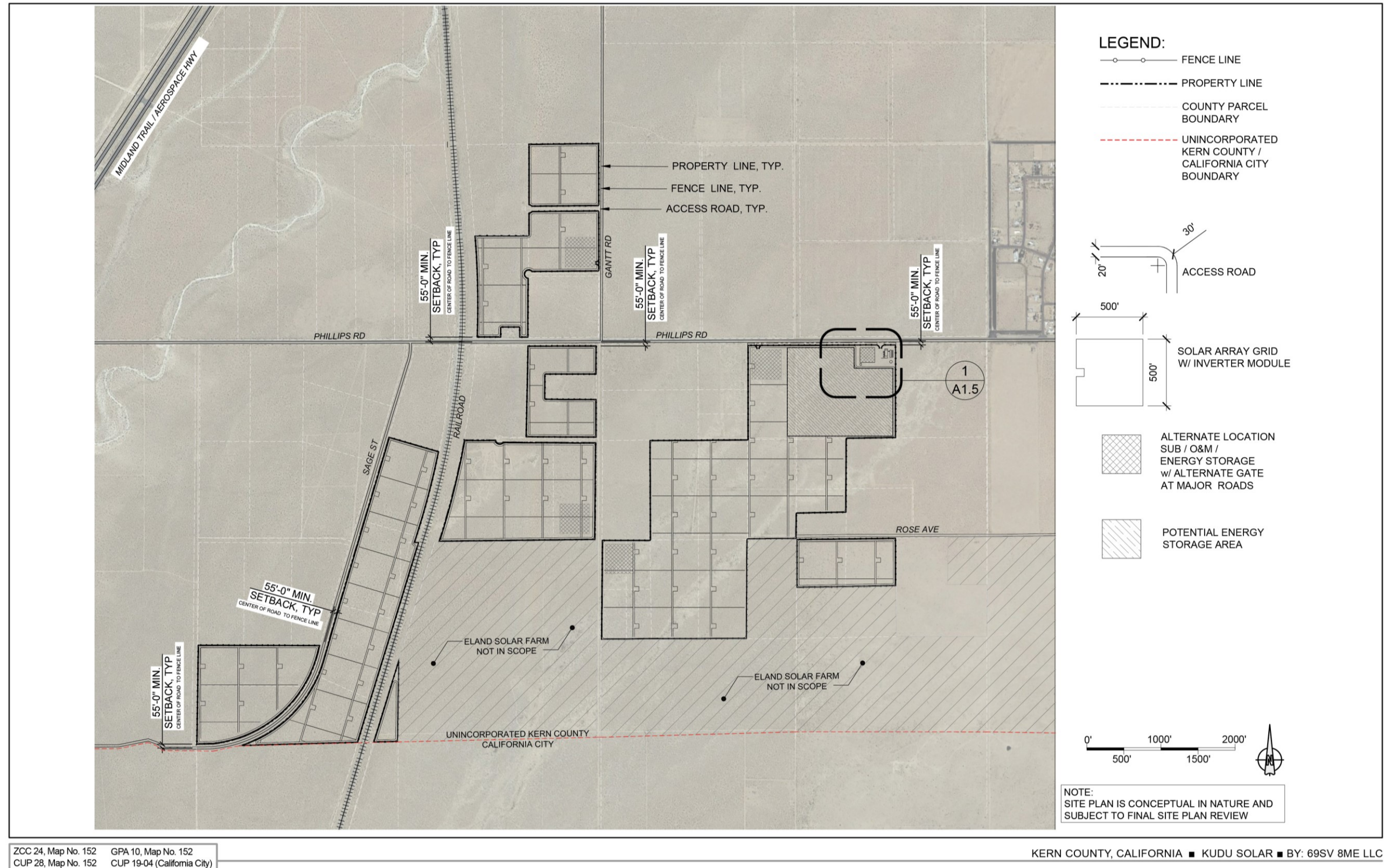


Figure 3-4B. Plan View – Site 1

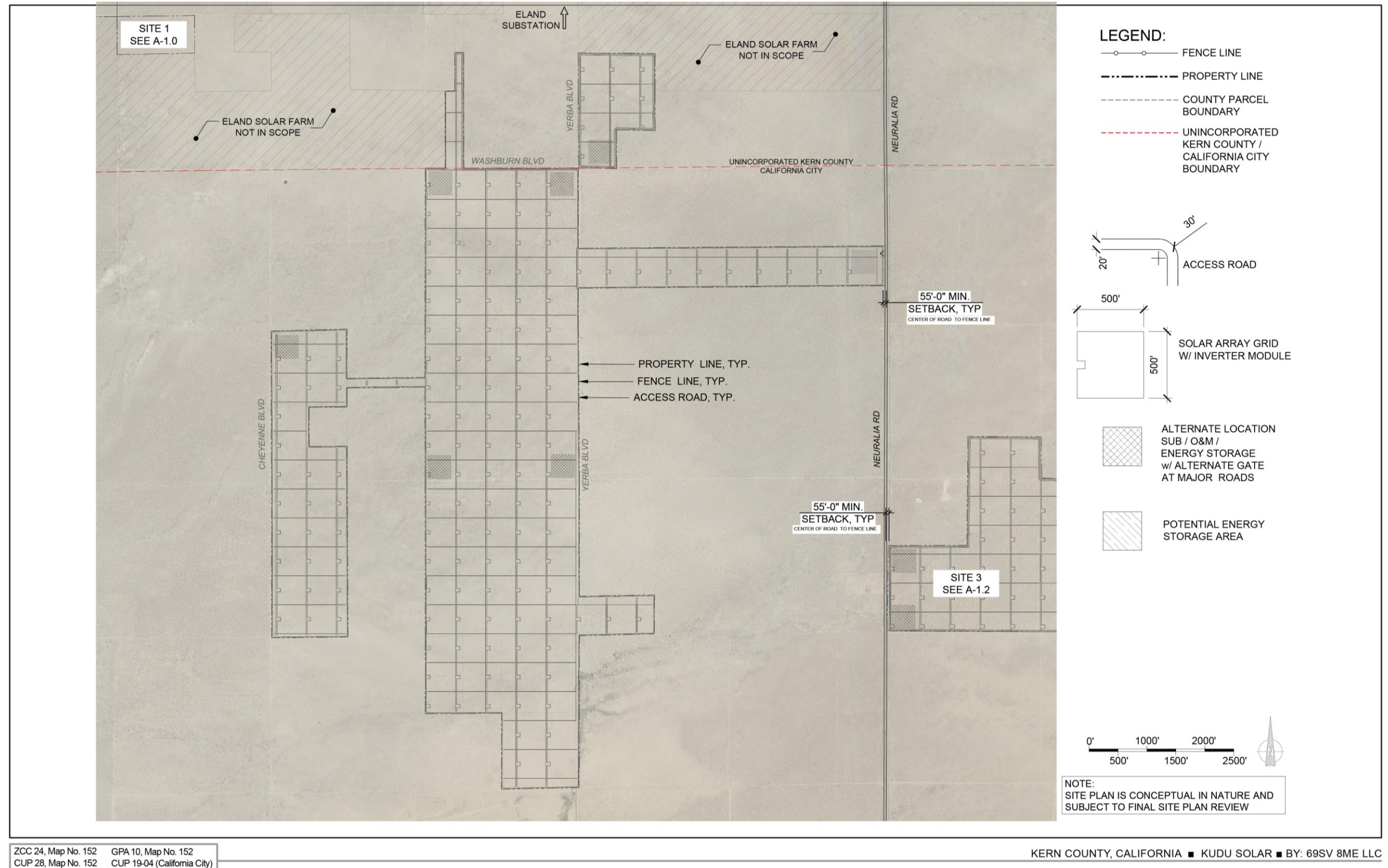


Figure 3-4C. Plan View – Site 2

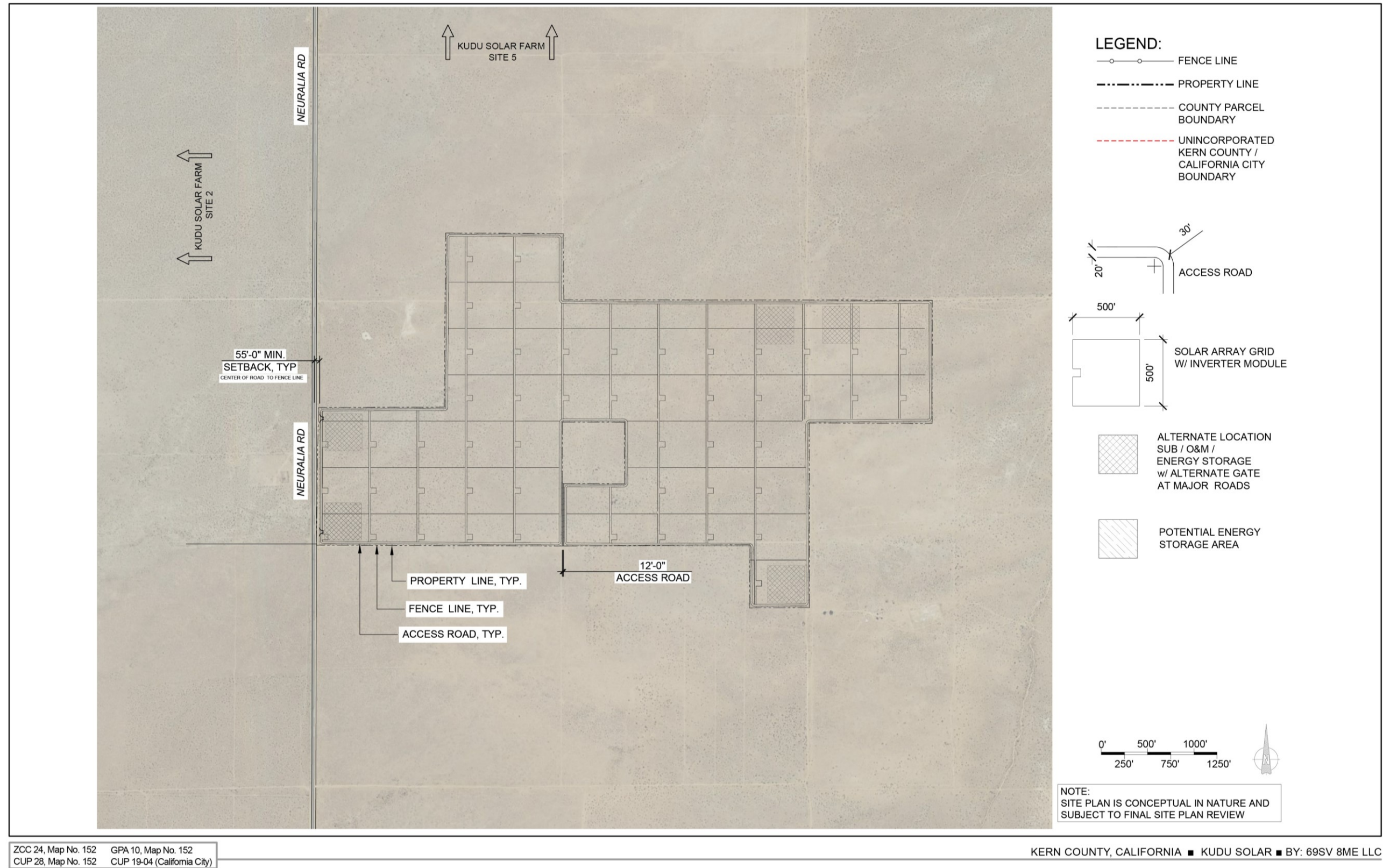


Figure 3-4D. Plan View – Site 3

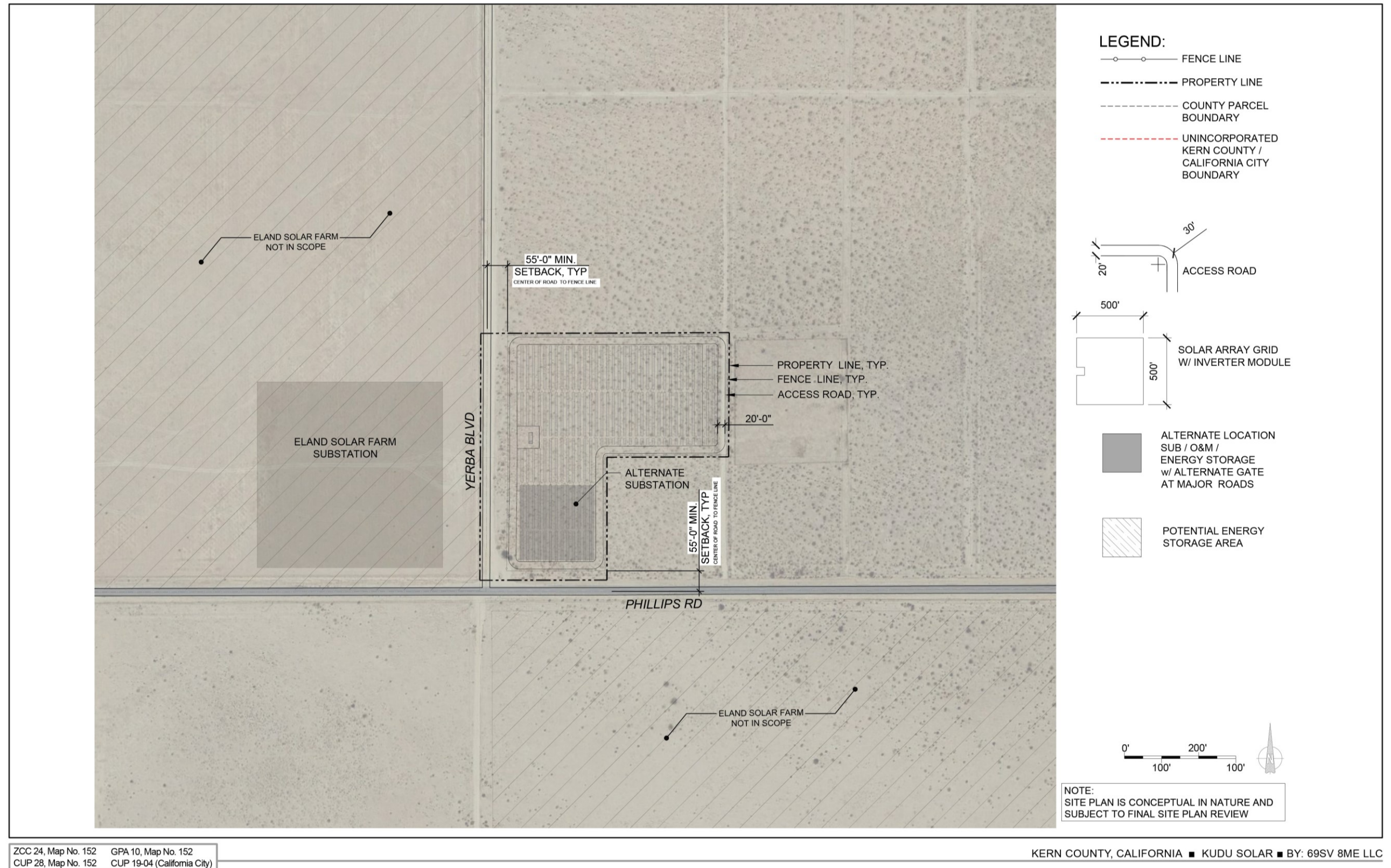


Figure 3-4E. Plan View – Site 4

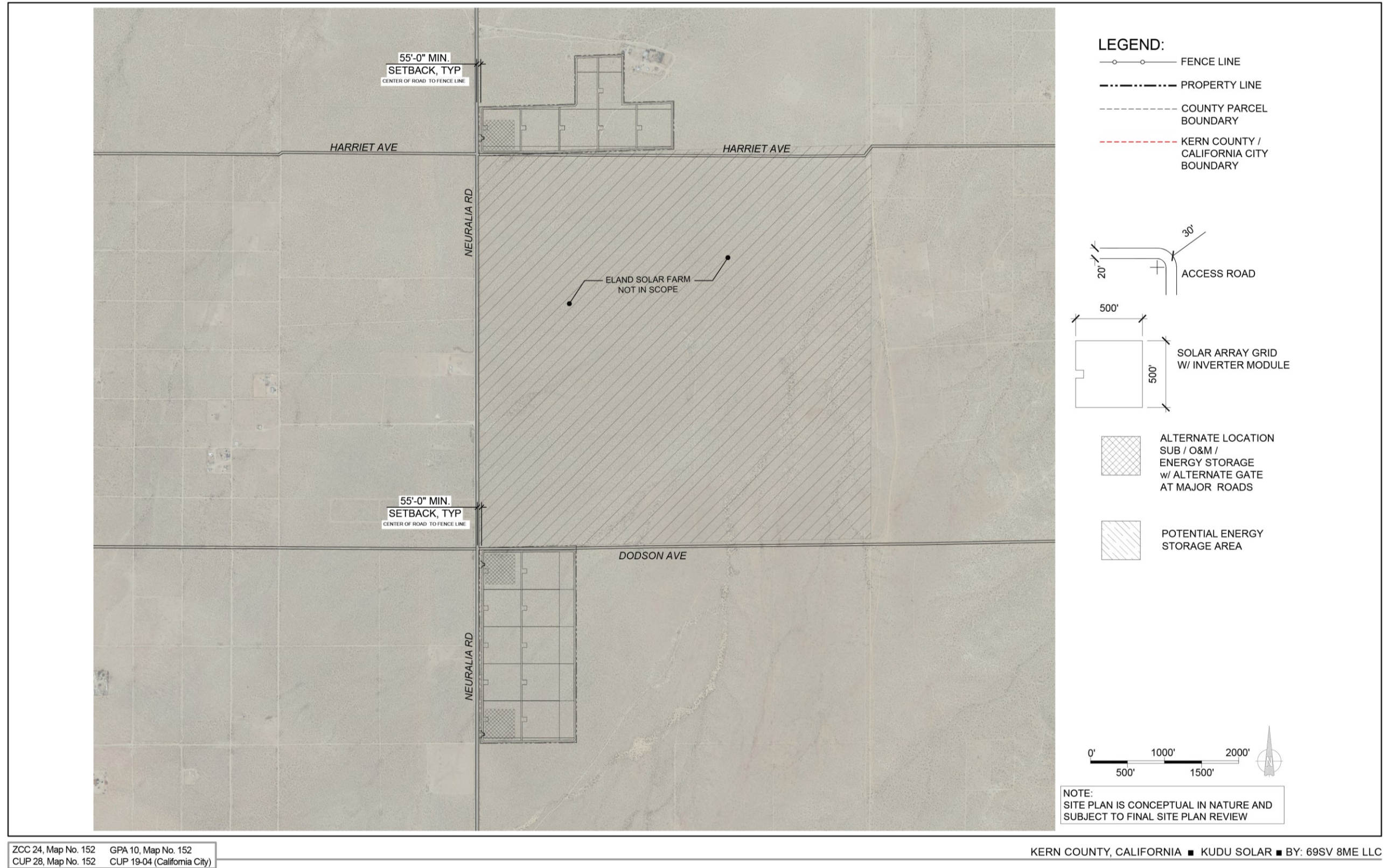


Figure 3-4F. Plan View – Site 5

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Table 3-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
Kern County					
1	470-020-19	8.5 (Kern County General Plan)	A	A	4.38
1	470-151-09	8.5 (Kern County General Plan)	A	A	19.62
1	470-151-15	8.5 (Kern County General Plan)	A	A	20.23
1	470-151-16	8.5 (Kern County General Plan)	A	A	20.40
1	470-151-17	8.5 (Kern County General Plan)	A	A	19.98
1	470-152-01	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	39.32
1	470-152-18	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	10.32
1	470-152-19	5.6 (Fremont Interim Rural Community Plan)	A-1 MH	A	4.93
1	470-330-01	8.5 (Kern County General Plan)	PL RS	A	5.06
1	470-330-02	8.5 (Kern County General Plan)	PL RS	A	4.77
1	470-330-03	8.5 (Kern County General Plan)	A	A	19.86
1	470-330-04	8.5 (Kern County General Plan)	A	A	20.15
1	470-330-06	5.6 (Fremont Interim Rural Community Plan)	A-1	A	9.95
1	470-330-07	5.6 (Fremont Interim Rural Community Plan)	A-1	A	10.02
1	470-330-14	8.5 (Kern County General Plan)	PL RS	A	4.89
1	470-330-15	8.5 (Kern County General Plan)	PL RS	A	5.23
1	470-350-04	8.5 (Kern County General Plan)	A	A	18.65
1	470-350-05	8.5 (Kern County General Plan)	A	A	18.91
1	470-350-06	8.5 (Kern County General Plan)	A	A	18.89
1	470-350-07	8.5 (Kern County General Plan)	A	A	18.57
1	470-350-08	8.5 (Kern County General Plan)	A	A	19.93
1	470-360-01	8.5 (Kern County General Plan)	A	A	18.43
1	470-360-02	8.5 (Kern County General Plan)	A	A	17.85
1	470-360-05	8.5 (Kern County General Plan)	A	A	21.15
1	470-380-01	8.5 (Kern County General Plan)	A	A	19.92
1	470-380-04	8.5 (Kern County General Plan)	A	A	21.35
1	470-380-05	8.5 (Kern County General Plan)	A	A	17.34
1	470-380-06	8.5 (Kern County General Plan)	A	A	19.88

Table 3-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage, continued

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
1	470-380-07	8.5 (Kern County General Plan)	A	A	21.95
1	470-020-08	8.5 (Kern County General Plan)	A	A	2.31
2	470-080-15	8.5 (Kern County General Plan)	A	A	20.27
2	470-080-16	8.5 (Kern County General Plan)	PL RS MH	A	10.07
2	470-080-17	8.5 (Kern County General Plan)	PL RS MH	A	10.10
2	470-080-32	8.5 (Kern County General Plan)	PL RS MH	A	10.07
2	470-322-13	5.6 (Kern County General Plan)	A-1 MH	A	2.39
2	470-322-15	5.6 (Kern County General Plan)	A-1	A	9.96
4	470-302-24	8.5 (Kern County General Plan)	PL RS MH	A	2.59
4	470-302-25	8.5 (Kern County General Plan)	PL RS MH	A	2.62
4	470-302-26	8.5 (Kern County General Plan)	PL RS MH	A	2.52
5	470-030-01	8.5 (Kern County General Plan)	A	A	79.22
5	469-170-10	8.5 (Kern County General Plan)	A	A	10.02
5	469-170-18	8.5 (Kern County General Plan)	A	A	39.49
Subtotal – Kern County					673.60
California City					
2	302-341-29	O/RA (California City General Plan)	O/RA	O/RA	168.79
2	302-342-01	O/RA (California City General Plan)	O/RA	O/RA	40.23
2	302-342-11	O/RA (California City General Plan)	O/RA	O/RA	2.67
2	302-342-12	O/RA (California City General Plan)	O/RA	O/RA	2.66
2	302-342-19	O/RA (California City General Plan)	O/RA	O/RA	29.69
2	302-342-25	O/RA (California City General Plan)	O/RA	O/RA	40.77
2	302-342-26	O/RA (California City General Plan)	O/RA	O/RA	39.89
2	302-342-27	O/RA (California City General Plan)	O/RA	O/RA	40.29
2	302-342-28	O/RA (California City General Plan)	O/RA	O/RA	40.68
2	302-290-03	O/RA (California City General Plan)	O/RA	O/RA	83.58
2	302-020-08	O/RA (California City General Plan)	O/RA	O/RA	40.17
2	302-020-09	O/RA (California City General Plan)	O/RA	O/RA	80.09
2	302-020-11	O/RA (California City General Plan)	O/RA	O/RA	163.68
2	302-020-14	O/RA (California City General Plan)	O/RA	O/RA	40.99
2	302-020-15	O/RA (California City General Plan)	O/RA	O/RA	10.52
2	302-020-16	O/RA (California City General Plan)	O/RA	O/RA	10.15
2	302-020-17	O/RA (California City General Plan)	O/RA	O/RA	9.59

Table 3-1. Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage, continued

Site Number	APN	Map Code Designation	Existing Zoning	Proposed Zoning	Acres
2	302-020-18	O/RA (California City General Plan)	O/RA	O/RA	9.98
2	302-470-14	O/RA (California City General Plan)	O/RA	O/RA	20.20
3	302-321-01	O/RA (California City General Plan)	O/RA	O/RA	160.93
3	302-322-01	O/RA (California City General Plan)	O/RA	O/RA	10.10
3	302-322-02	O/RA (California City General Plan)	O/RA	O/RA	10.09
3	302-322-04	O/RA (California City General Plan)	O/RA	O/RA	10.24
3	302-322-05	O/RA (California City General Plan)	O/RA	O/RA	10.28
3	302-322-06	O/RA (California City General Plan)	O/RA	O/RA	40.04
3	302-322-08	O/RA (California City General Plan)	O/RA	O/RA	10.33
3	302-322-09	O/RA (California City General Plan)	O/RA	O/RA	40.50
3	302-322-10	O/RA (California City General Plan)	O/RA	O/RA	10.27
3	302-322-11	O/RA (California City General Plan)	O/RA	O/RA	10.29
3	302-325-49	O/RA (California City General Plan)	O/RA	O/RA	9.74
3	302-330-33	O/RA (California City General Plan)	O/RA	O/RA	20.21
3	302-330-37	O/RA (California City General Plan)	O/RA	O/RA	20.38
3	302-305-15	O/RA (California City General Plan)	O/RA	O/RA	43.54
Subtotal – California City					1,281.53
Total					1,955.13
<p>Kern County General Plan Map Code Designation: 8.5 (Resource Management, Min. 20 Acre Parcel Size)</p> <p>Fremont Interim Rural Community Plan Map Code Designation: 5.6 (Min. 2.5 Gross Acres/Unit)</p> <p>Kern County Zoning District: A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)</p> <p>California City General Plan Designation: O/RA = Controlled Development & Open Space</p> <p>California City Zoning District: O/RA = Open Space/Residential/Agricultural</p>					

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 (SB) 350 (2015), which requires that 50 percent 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 RPS to a 100 percent goal by 2045. As required by the State *CEQA Guidelines*, the specific objectives of the project are provided below:

- Construct and operate a solar energy facility capable of producing up to 500 MW of electricity and up to 600 MW of energy storage to assist the State of California in achieving its 50 percent renewable portfolio standard by 2030
- Provide renewable energy to the electric grid to meet increasing demand for in-state generation
- Integrate operating facilities with other existing solar projects in the vicinity to maximize economies of scale
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County
- Work toward California City's goal of encouraging commercial, industrial and government (public facilities) entities to create sustainable employment through jobs paying higher wages in compliance with the environmental standards for the City and the region.
- Site and design the project is an environmentally responsible manner consistent with current Kern County and City of California City guidelines.
- Promote economic development and bring living-wage jobs to the region throughout the life of the proposed project.

3.4 Environmental Setting

Regional Setting

The project site is located within the Fremont Valley, southwest of Koehn Dry Lake in the western portion of the Mojave Desert. The project site is located on portions of the California City North and Mojave North East 7.5 minute quadrangles, published by the USGS. In general, the topography of the area is relatively flat and is dominated by desert vegetation. The project site is partially located within the City of California City in Kern County. The Cities of Lancaster and Palmdale in Los Angeles County are located within the greater project vicinity, approximately 30 miles to the south of the project site's southern extent.

Local Setting and Surrounding Land Uses

Elevations within the project site range from roughly 2,460 feet above mean sea level at the western edge of the project site, to roughly 2,174 feet at the northeast corner of the project site. The land slopes gently from the southwest towards the northeast throughout. The project site is relatively flat and features numerous ephemeral desert drainages trending to the northeast, which ultimately drain into Koehn Dry Lake located to the northeast of the project site. Landforms in the Fremont Valley include granite-derived alluvial fans and plains, low hills, washes, and an alkaline basin. The entire area drains in a northeasterly direction to Koehn Lake. Native vegetation on-site is typical of that found throughout the Mojave Desert, dominated by creosote bush and white bursage on slopes and plains and saltbush scrub in the alkaline basin.

The project site is adjacent to the approved Eland Solar Project, south of the existing Springbok 1 and 2 Solar Projects and southeast of the Los Angeles Department of Water and Power Beacon solar facility.

Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. A portion of the Pacific Crest Trail (PCT) is approximately 9.5 miles west of the Barren Ridge substation and approximately 10.5 miles west of the westernmost extent of the project site.

Based on a review of FEMA's Flood Insurance Rate Maps, portions of the solar facility site and gen-tie line are mapped in 100-year (Zone A) floodplains. Zone A is defined as areas subject to inundation by the 1 percent annual chance flood event generally determined using approximate methodologies. The rest of the project site is mapped as Zone X, which is defined as areas of minimal flood hazard that are outside of the Special Flood Hazard Area and beyond the limits of the 0.2 percent annual chance (500-year) flood. Refer to Figure 3-5, *FEMA Map*.

Based on a review of records maintained by the California Department of Conservation (DOC), California Department of Conservation, Geologic Energy Management Division (CalGEM) [formerly Division of Oil, Gas and Geothermal Resources (DOGGR)], two wells are located within the boundaries of the proposed project sites. According to CalGEM, both of these wells (National Security Oil Co. "1" [API: 0402932491] and Childs-Wall "1" [API: 0402932490]) are listed as "dry holes" and have a status of "plugged (CalGEM 2021).

The Kern County Fire Department and California City Fire Department would provide fire suppression and emergency medical services to the project area. The portion of the project site within unincorporated Kern County would be served by Station #14 located at 1773-1999 Mojave-Barstow Highway in Mojave. The portion of the project site within California City would be served by Station #85, located at 20890 Hacienda Boulevard in California City.

Law enforcement services in the project area are provided by the Kern County Sheriff's Department and California City Police Department. The portion of the project site within unincorporated Kern County would be served by the Mojave Substation located at 1771 Highway 58 in Mojave. The portion of the project site within California City would be served by the station located at 21130 Hacienda Boulevard in California City.

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. The southern portion of the proposed solar facility would be located within the Airport Influence Areas of the California City Municipal Airport. Section 4.2 of the ALUCP addresses the California City Municipal Airport and discusses land uses and procedures relative to its aviation and other compatibility criteria. In addition, Section 4.17.3 of the ALUCP requires that the Edwards AFB be notified of development that falls within identified notification categories. Figure 3-6, *ALUCP in Relation to the Project Site*, shows the project site and its vicinity, with respect to the ALUCP zones.

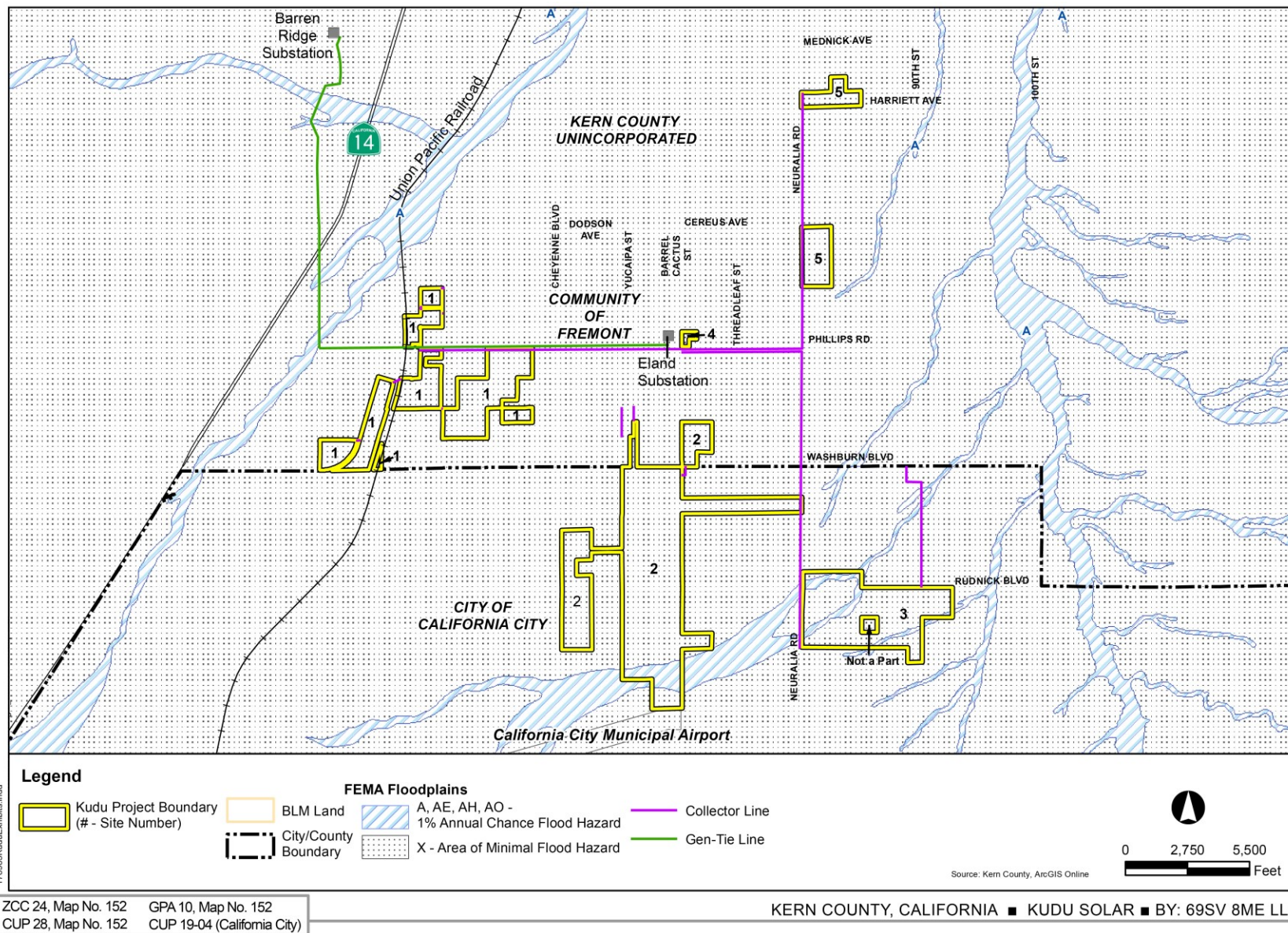
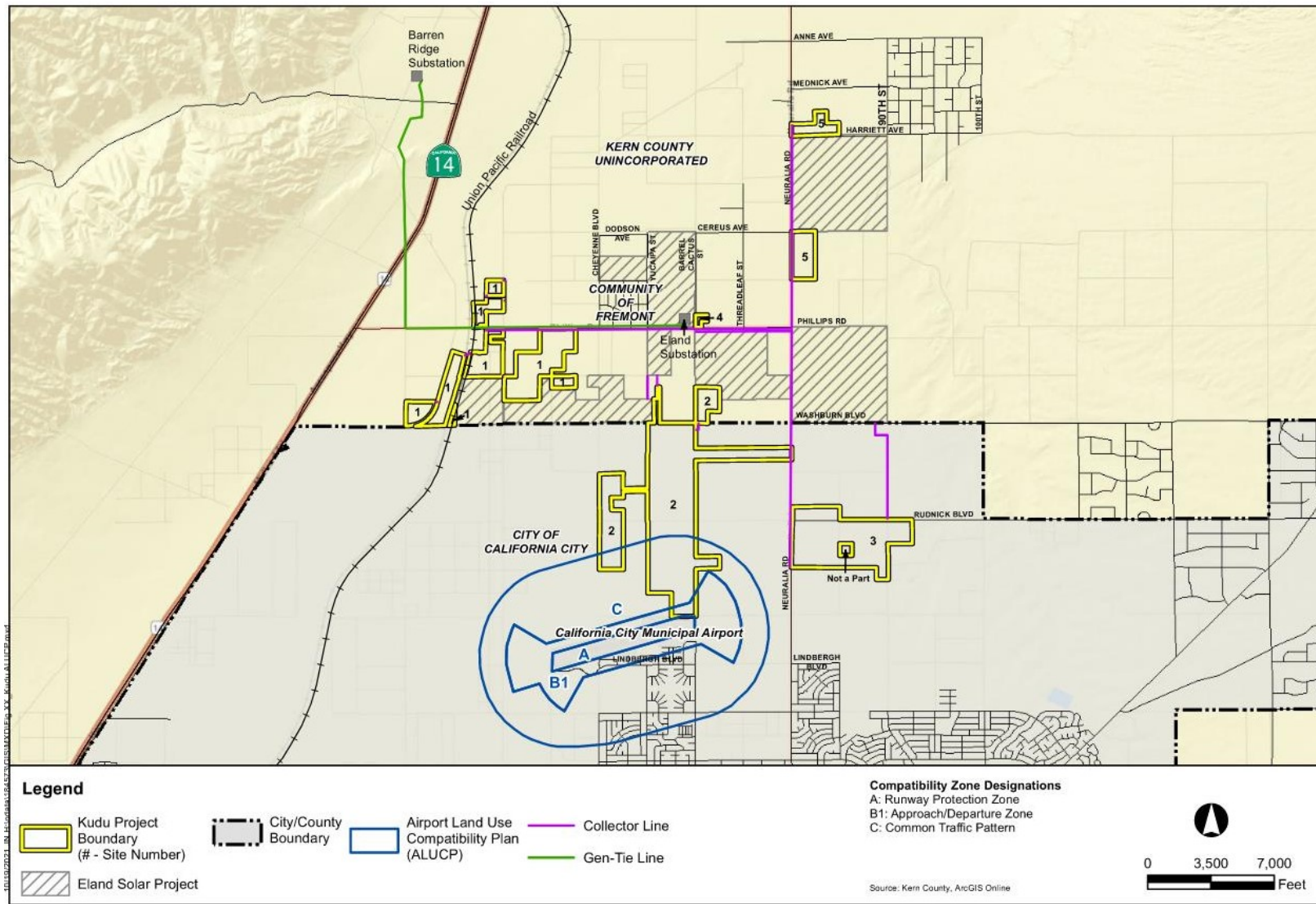


Figure 3-5. FEMA Map



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 3-6. ALUCP in Relation to the Project Site

3.5 Land Use and Zoning

Kern County General Plan and Fremont Interim Rural Community Plan

The portions of the project site located north of Washburn Boulevard are within the administrative boundaries of the Kern County General Plan and the Fremont Interim Rural Community Plan. Interim Rural Community Plans, including the Fremont Interim Rural Community Plan, are not official planning documents until formal Specific Plans have been adopted, and projects within Interim Rural Community Plans are governed by the goals and policies of the Kern County General Plan that pertain to the area in question. As shown on Figure 3-7, *Existing General Plan Designations – Kern County*, the project parcels located in unincorporated Kern County are designated by the Kern County General Plan as Map Code 8.5 (Resource Management, Min. 20 Acre Parcel Size) and by the Fremont Interim Rural Community Plan as 5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit).

Existing land uses in the surrounding area are primarily undeveloped. Table 3-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, below, identifies the project site and surrounding land uses.

Circulation Element – Kern County General Plan

The proposed project involves a General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservations along section and midsection lines. This would allow solar panels to be placed throughout the project site to optimize the project area for the facility design, and no setbacks from midsection line future road reservations would be required. The proposed amendments would not affect property owner access to any other surrounding properties. Furthermore, it is unlikely that a road would ever be constructed once the project was in operation and the amendments would not impede traffic flow to and from the surrounding rural residential uses in the project vicinity. Figure 3-8, *Circulation Element Amendment*, depicts the future road reservations in unincorporated Kern County proposed to be removed as part of the proposed project.

Kern County Zoning Ordinance

The project parcels in unincorporated Kern County are subject to the provisions of the Kern County Zoning Ordinance. The project site is zoned as specified in Table 3-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, below, and depicted on Figure 3-9, *Existing Zoning – Kern County*. The project parcels in unincorporated Kern County have a zone classification of A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining). Refer also to Figure 3-10, *Proposed Zoning – Kern County*, which shows the proposed zone changes to a Map Code Designation of zone A (Exclusive Agriculture).

The project proponents also requested two Nonsummary Vacations to request vacation of public access easement(s), as shown on Figure 3-11, *Proposed Nonsummary Vacation of Public Access Easements*.

California City General Plan

The portions of the project site located south of Washburn Boulevard are within the administrative boundaries of the California City General Plan (California City 2009). As shown on Figure 3-12, *Existing General Plan Designations – California City*, the project parcels located in California City are designated by the General Plan as O/RA (Controlled Development & Open Space).

Circulation Element – California City General Plan

The project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City’s jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

California City Zoning Ordinance

The project parcels located in California City are subject to the provisions of the California City Zoning Ordinance. As shown on Figure 3-13, *Existing Zoning – California City*, the project parcels located in California City have a zone classification of RA (Residential/Agriculture).

On May 11, 2021, the City of California adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use in O/RA zoned districts.

Table 3-2. Existing On- and Off-Site Land Use, General Plan Map Code Designations, and Zoning

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Kern County			
Project Site	Undeveloped	4.2/5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit); 8.5 (Resource Management, Min. 20 Acre Parcel Size)	A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)
North	Undeveloped, sparse rural residential dwellings	5.4 - Min. 4 Units/Net Acre (Fremont Interim Rural Community Plan) 5.6 - Min. 2.5 Gross Acres/Unit (Fremont Interim Rural Community Plan) 5.8 - Min. 20 Gross Acres/Unit (Fremont Interim Rural Community Plan) 8.5 - Resource Management, Min. 20 Acre Parcel Size (Kern County General Plan) 8.5/2.1 - Resource Management, Min. 20 Acre Parcel Size/Seismic Hazard (Kern County General Plan) 8.5/2.5 - Resource Management, Min. 20 Acre Parcel Size/Flood Hazard (Kern County General Plan)	A (Exclusive Agriculture); FPS (Floodplain Secondary Combining); A-1 (Limited Agriculture); PL RS (Platted Lands, Residential Suburban Combining); FP (Floodplain Combining); MH (Mobile Home Combining); E(20) (Estate 20 Acres); GH (Geologic Hazard Combining)
East	Undeveloped, sparse rural residential dwellings, BLM Administered Land	8.5 (Resource Management, Min. 20 Acre Parcel Size); 1.2 (Incorporated Cities)	A (Exclusive Agriculture); FP (Floodplain Combining); FPS (Floodplain Secondary Combining); PL RS (Platted Lands, Residential Suburban Combining); MH (Mobile Home Combining); GH (Geologic Hazard Combining) California City
South	Undeveloped, California City Airport	1.2 (Incorporated Cities)	California City

Table 3-2. Existing On- and Off-Site Land Use, General Plan Map Code Designations, and Zoning, continued

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
West	Undeveloped, State Route 14, BLM Administered Land; Union Pacific Railroad	1.1 – State and Federal Land (Kern County General Plan) 1.2 - Incorporated Cities (Kern County General Plan) 8.5 - Resource Management, Min. 20 Acre Parcel Size (Kern County General Plan) 8.5/2.5 - Resource Management, Min. 20 Acre Parcel Size/Flood Hazard (Kern County General Plan))	A (Exclusive Agriculture); FP(Floodplain Combining); FPS (Floodplain Secondary Combining); A-1 (Limited Agriculture); E(20) (Estate 20 Acres); PL (Platted Lands); GH (Geologic Hazard Combining)California City
California City			
Project Site	Undeveloped	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)
North	Undeveloped, sparse rural residential dwellings	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural); Kern County
East	Undeveloped, BLM Administered Land	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)
South	Undeveloped, California City Airport, scattered Industrial Development	O/RA - Controlled Development & Open Space (California City General Plan) M1 - Light Industrial and Research (California City General Plan)	O/RA (Open Space/Residential/Agricultural) M1 - Light Industrial
West	Undeveloped State Route 14, BLM Administered Land	O/RA - Controlled Development & Open Space (California City General Plan)	O/RA (Open Space/Residential/Agricultural)

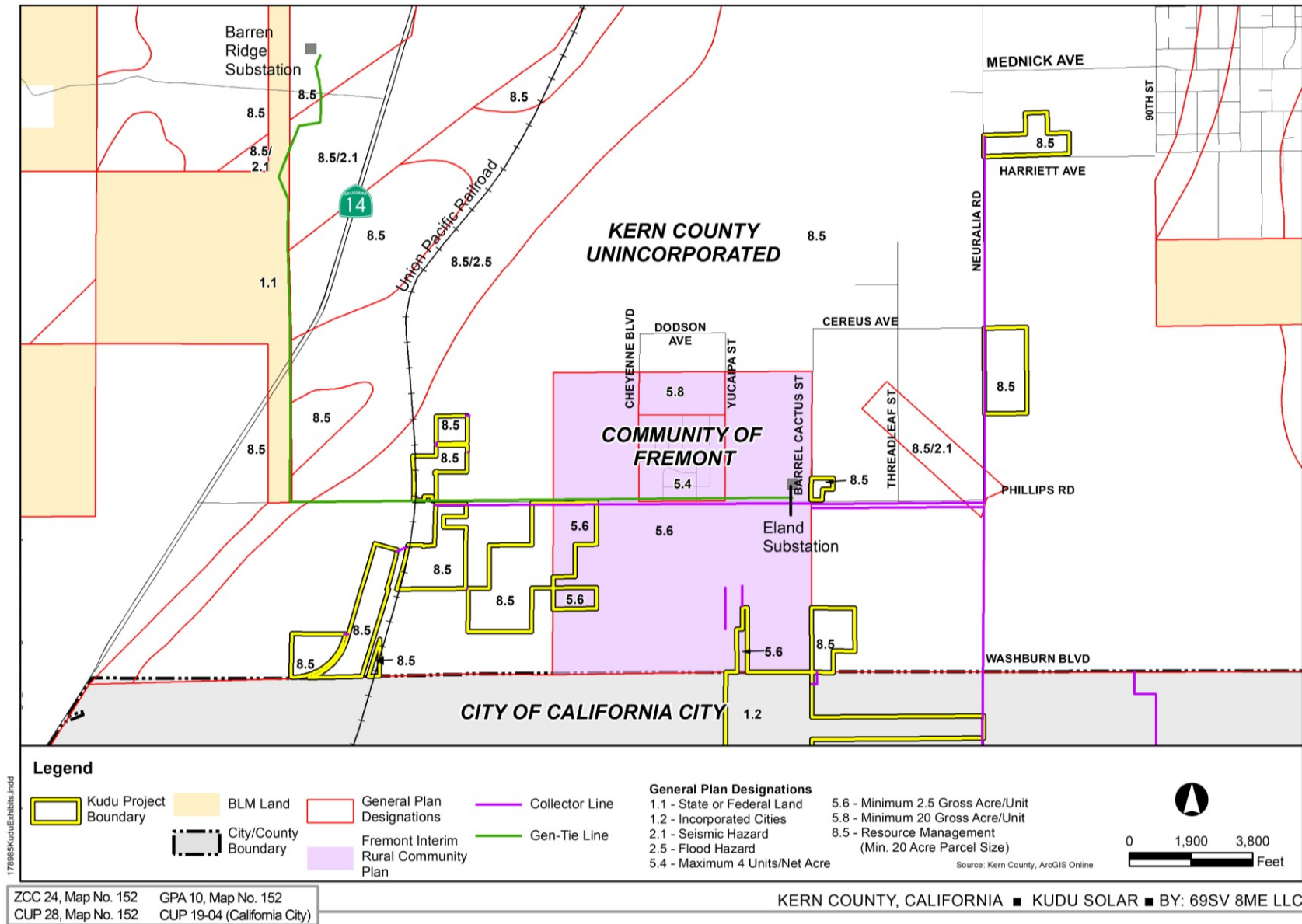


Figure 3-7. Existing General Plan Designations – Kern County

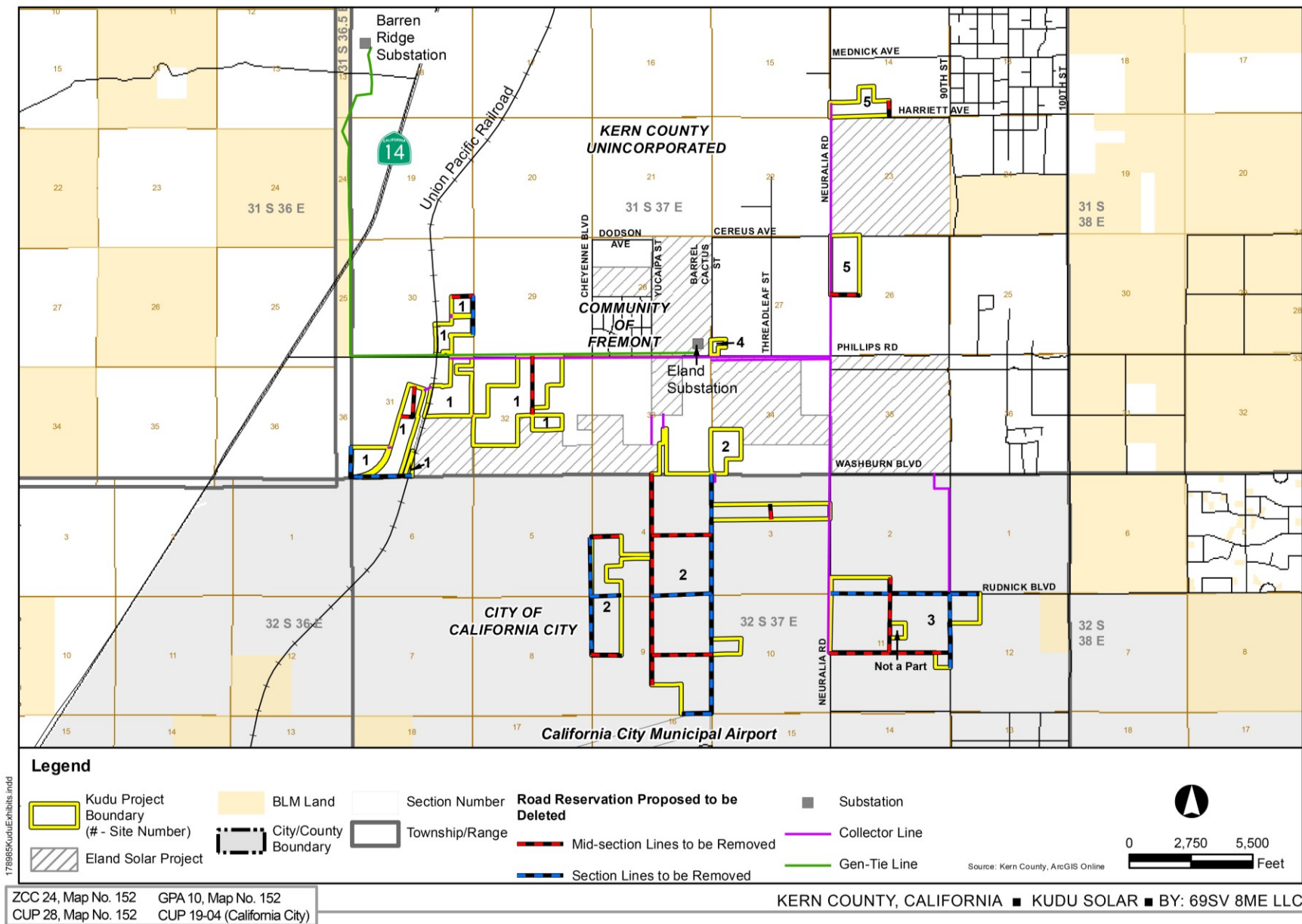


Figure 3-8. Circulation Element Amendment

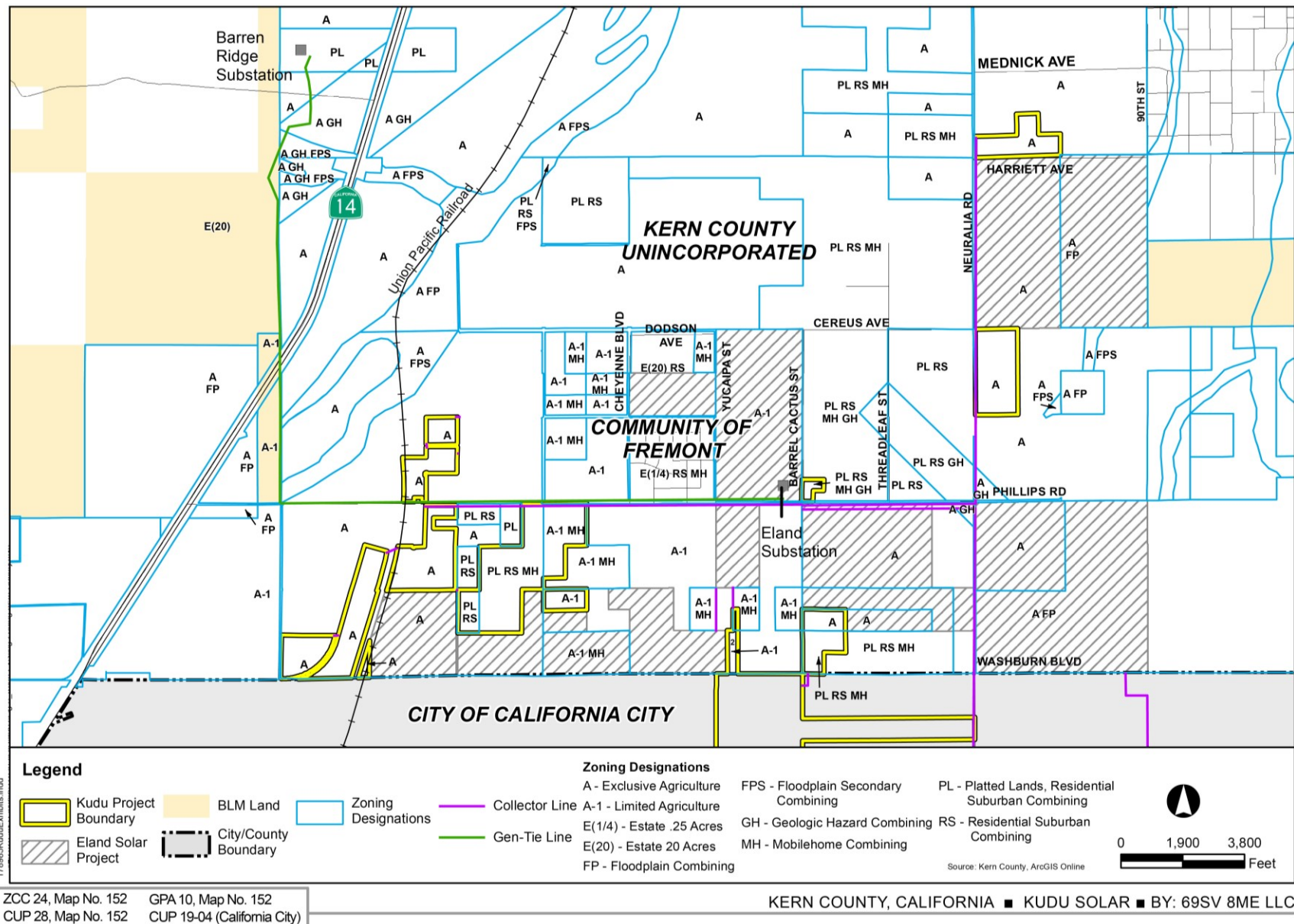


Figure 3-9. Existing Zoning – Kern County

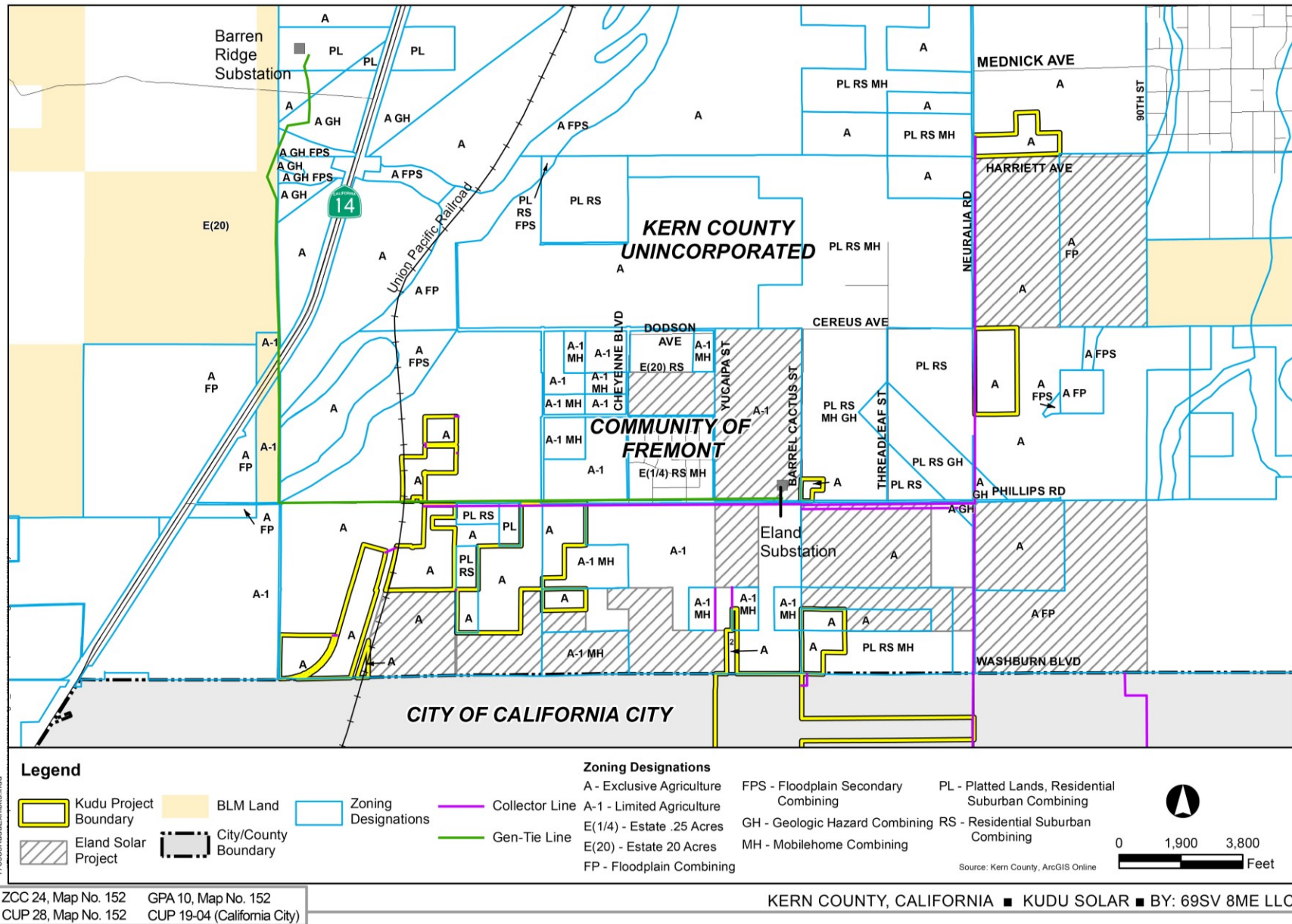
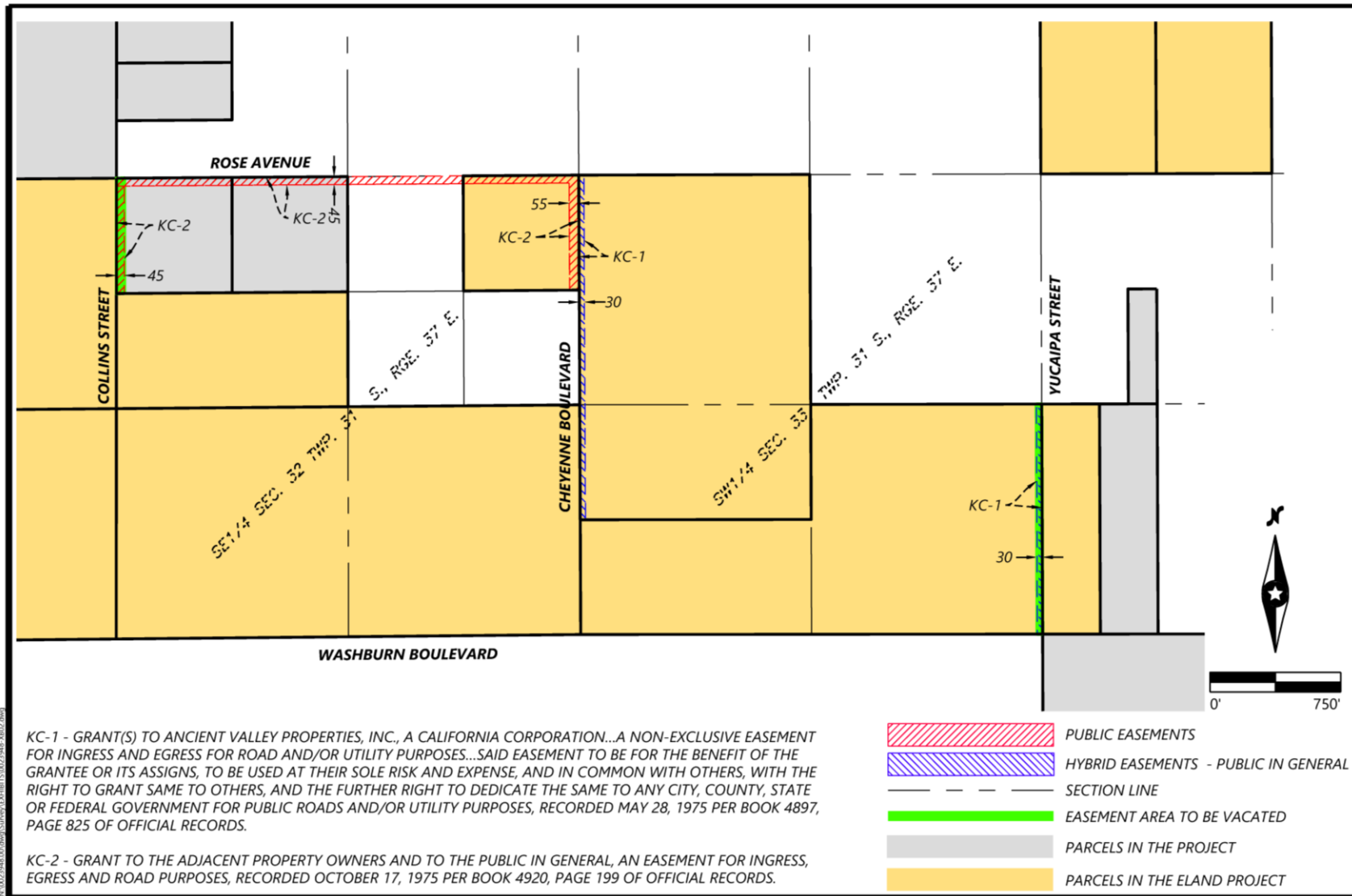


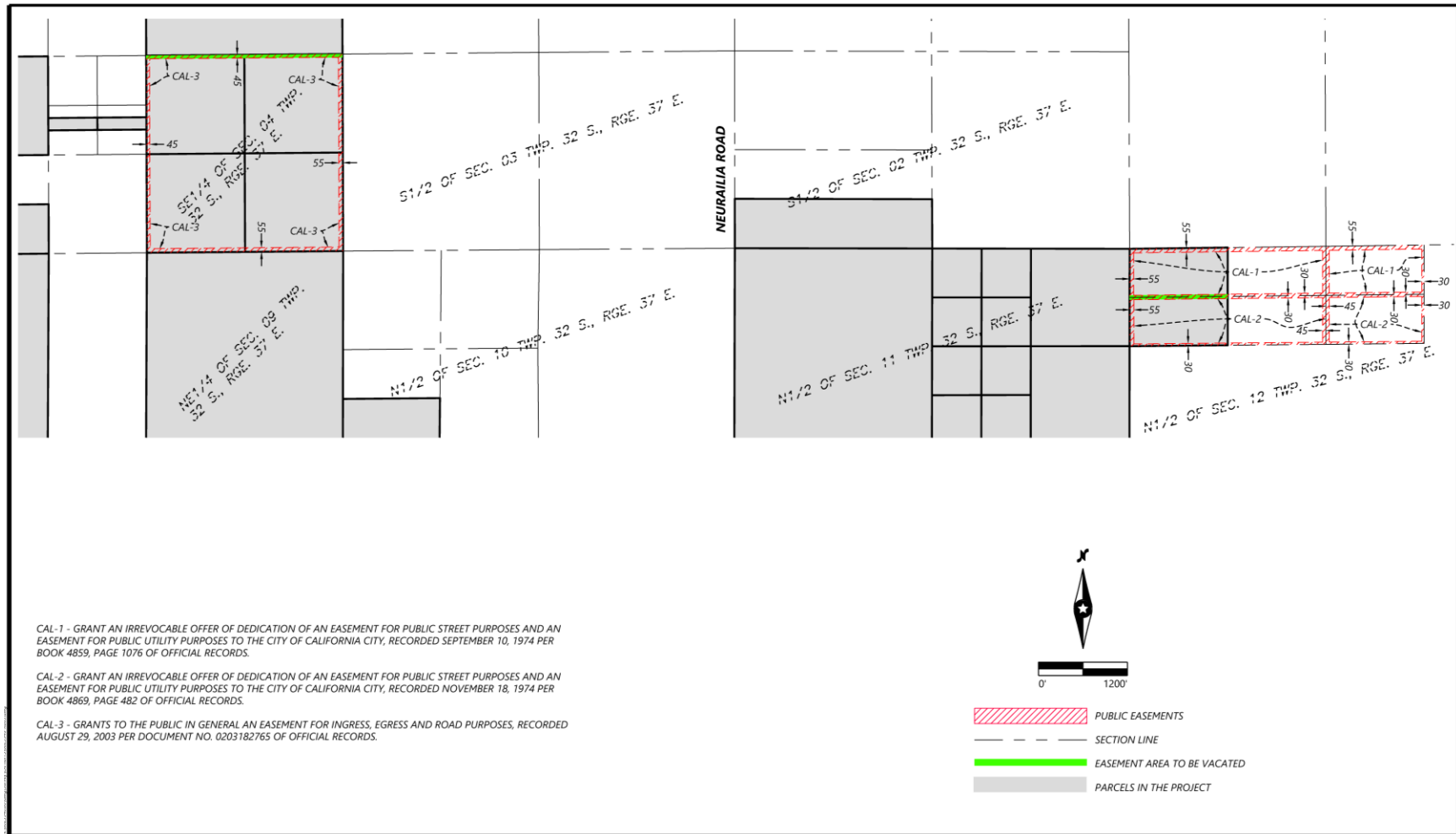
Figure 3-10. Proposed Zoning – Kern County



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 3-11A. Proposed Nonsummary Vacation of Public Access Easements – Kern County



Source: Westwood Professional Services, 11/15/2021

ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

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Figure 3-11B. Proposed Nonsummary Vacation of Public Access Easements – California City

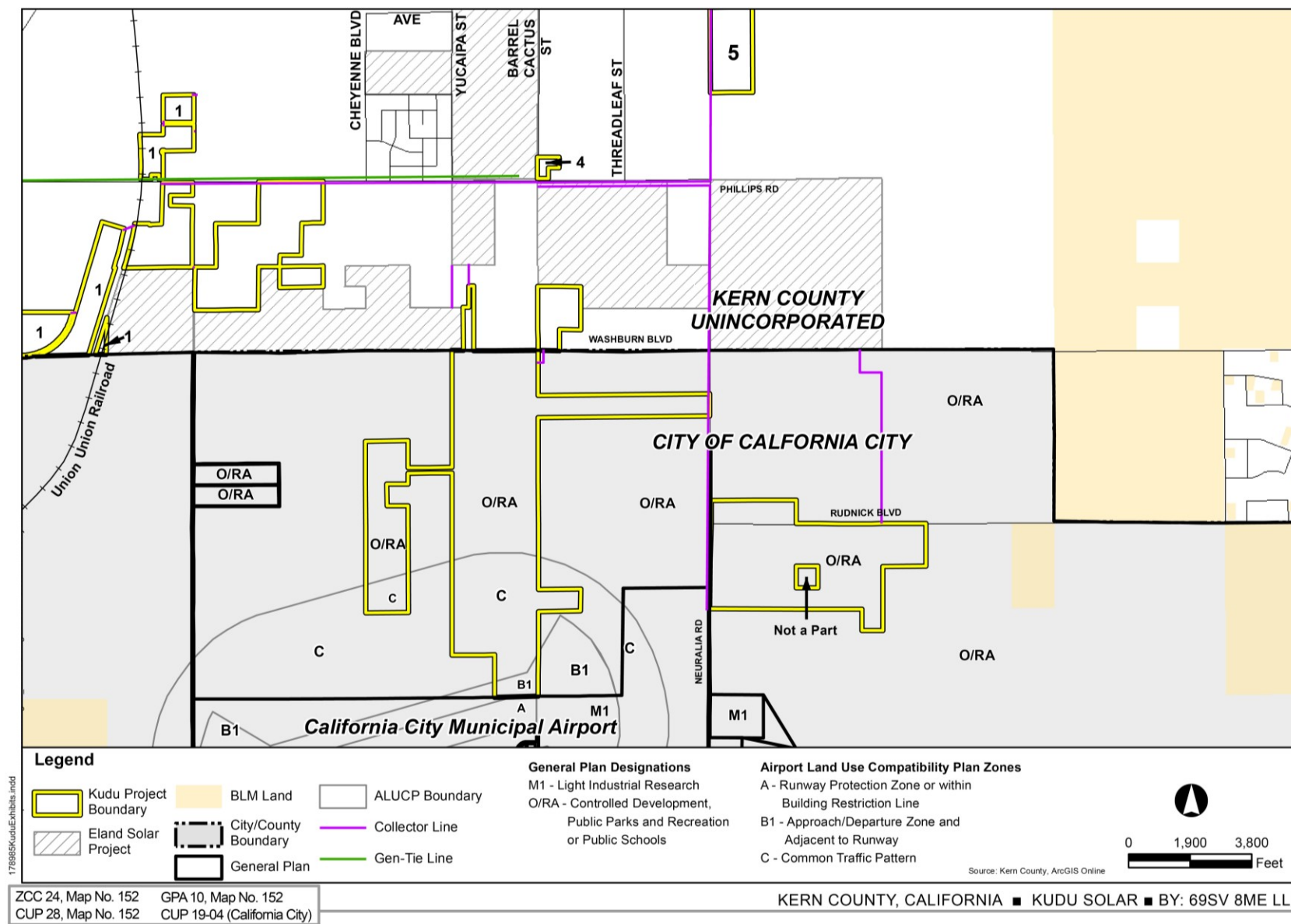


Figure 3-12. Existing General Plan Designations – California City

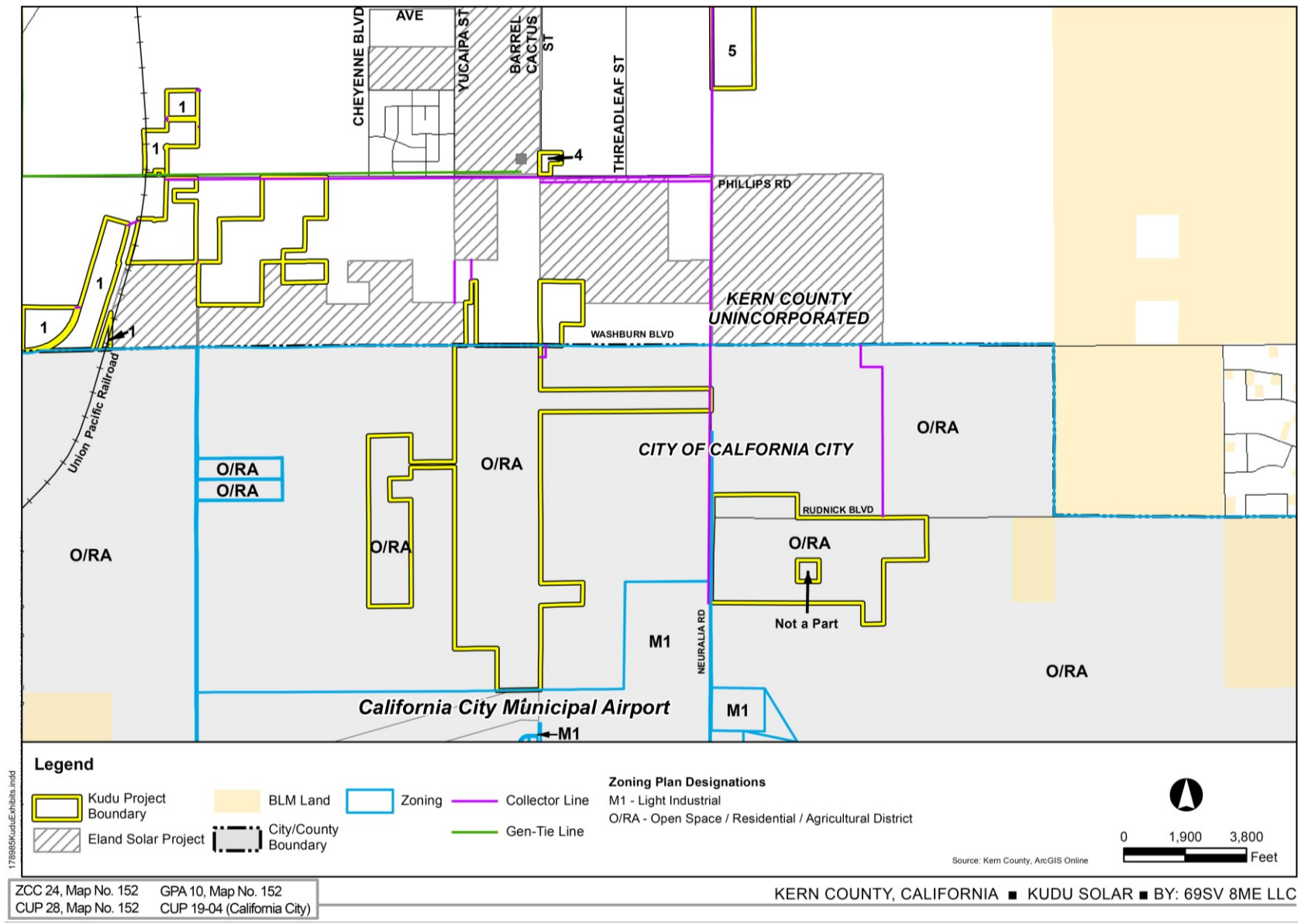


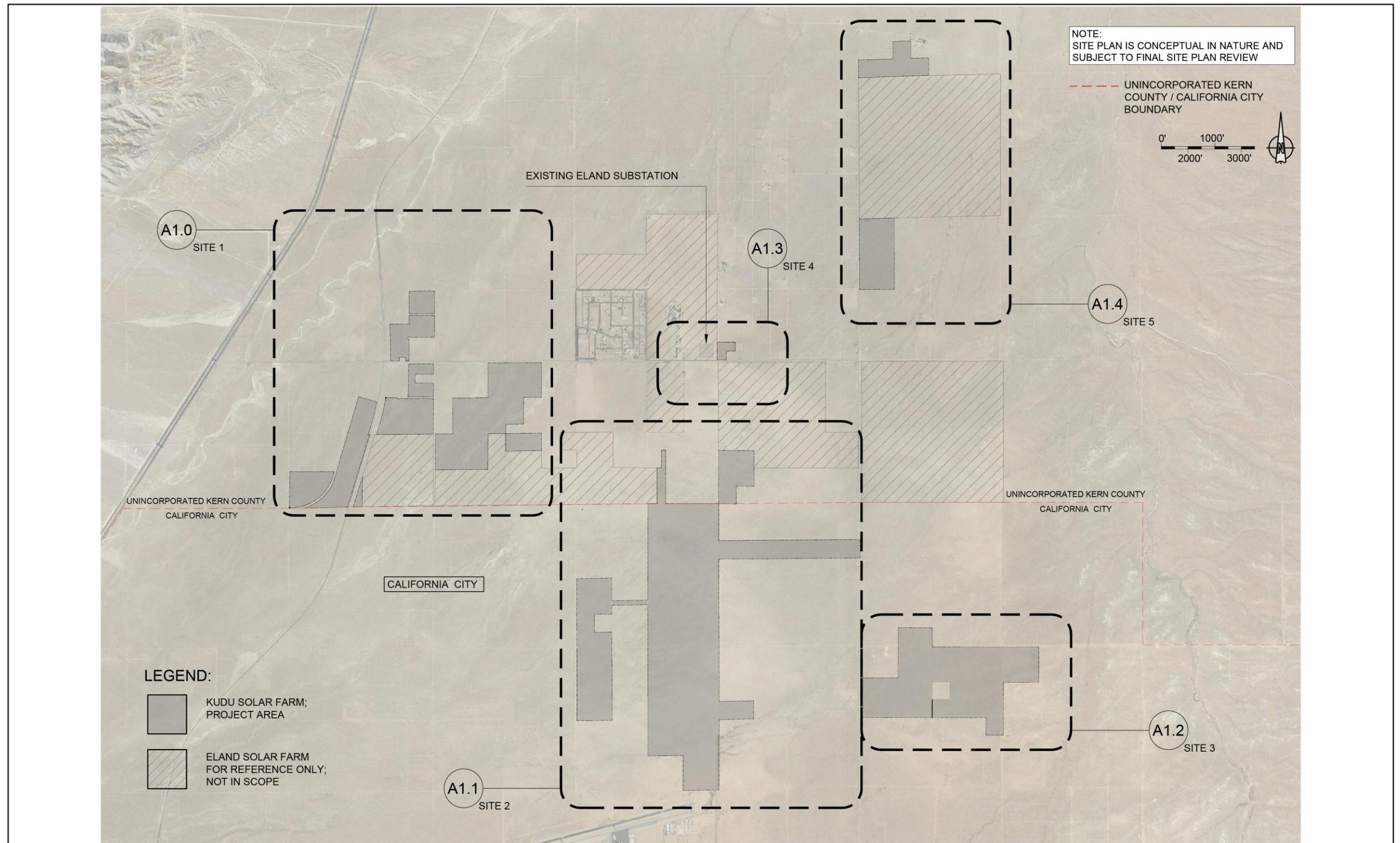
Figure 3-13. Existing Zoning – California City

3.6 Proposed Project

The proposed project would develop a solar PV facility and energy storage system capable of producing up to 500 MW of AC power and 600 MW hours of storage capacity on approximately 1,955 acres of privately owned land. The project would include a 230 kV overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power's Barren Ridge Substation. 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), inverter stations, and operations and maintenance facilities. Refer to Figure 3-14, *Overall Site Plan*, and Figures 3-4B to 3-4F, *Plan View (Sites 1 to 5)*.

As stated previously, the project would require approval of General Plan Amendments to the Circulation Element of the Kern County General Plan; changes in zone classifications for the project site from A-1 (Limited Agriculture), A-1 MH (Limited Agriculture, Mobile Home Combining), PL RS (Platted Lands, Residential Suburban Combining), and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A (Exclusive Agriculture); and a conditional use permit (CUP) to allow for the construction and operation of a solar energy electrical facility and battery energy storage system. The project would also require a CUP from California City for the construction of a utility-scale solar facility on parcels designated as O/RA (Controlled Development, Public Parks and Recreation or Public Schools) in the General Plan and zoned O/RA (Open Space/Residential/Agricultural) in the City's Zoning Ordinance. Further detail regarding these approvals is provided in the following list:

- Kern County
 - Zone Change Case No. 14, Map No. 152 as follows:
 - From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 164.76 acres;
 - From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and
 - From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
 - Issuance of Conditional Use Permit No. 28, Map No. 152 to allow for the construction and operation, within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance.
 - General Plan Amendment No. 10, Map No. 152 to the Circulation Element of the Kern County General Plan to remove road reservations on section and mid-section lines within the Kern County project boundaries.



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

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Figure 3-14. Overall Site Plan

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- Nonsummary Vacation, Map No. 152 to remove public access easements.
- City of California City (Responsible Agency)

The City of California City is a Responsible Agency under CEQA. For the parcels within the city limits of the City of California City, the City will require the project proponent to obtain a Conditional Use Project (CUP) from the City to allow for the construction and operation of a solar facility, in the O/RA (Openspace/Residential Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity (CUP 19-04). On May 11, 2021, the City of California adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use in O/RA zoned districts.

Additionally, the project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

The power generated on the project site would assist the State in complying with the Renewables Portfolio Standard under Senate Bill 350, which requires that by December 31, 2030, 50 percent of all electricity sold in California shall be generated from renewable energy sources. The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in furtherance of the goals of the California Renewable Energy Portfolio Standard. The proposed project has an anticipated operational life of up to 35 years. At the end of the proposed 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.

Project Characteristics

Project Facilities

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

- PV Module Configuration
- Inverter Stations
- Energy Storage System
- On-site Meteorological Station
- Operations and Maintenance Building

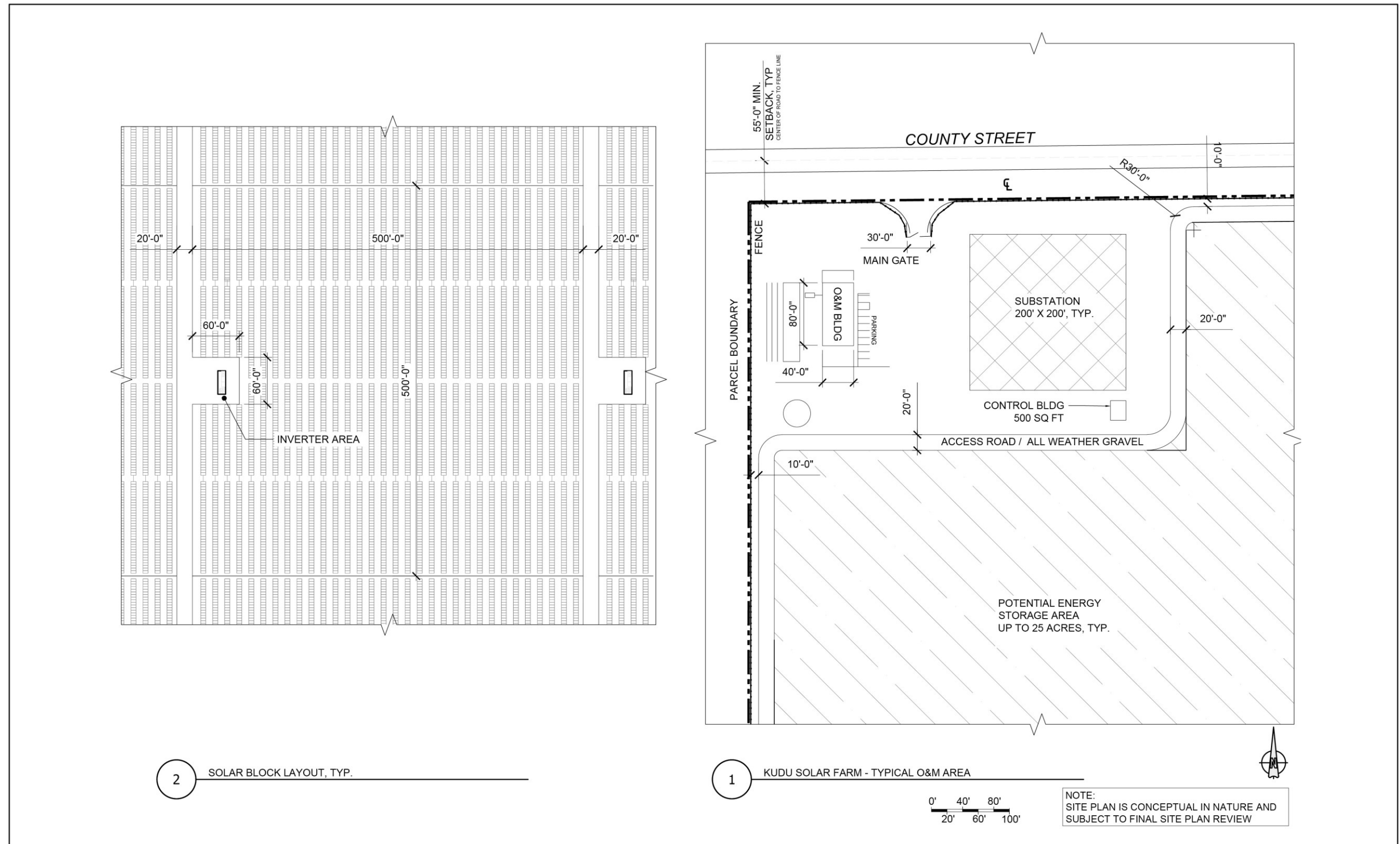
- Substation(s)
- Transmission Line
- Water Storage Tank(s)
- Project Site Security and Fencing
- Project Site Lighting

PV Module Configuration

The proposed project would use PV panels or modules (including but not limited to concentrated PV technology) on mounting frameworks to convert sunlight directly into electricity. Individual panels would be installed on either fixed-tilt or tracker mount systems (single- or dual-axis, using galvanized steel or aluminum). If the panels are configured for fixed-tilt, the panels would be oriented toward the south. For tracking configurations, the panels would rotate to follow the sun over the course of the day. Although the panels could stand up to 20 feet high, depending on the mounting system used and on County building codes, panels are expected to remain between 6 and 8 feet high. Refer to Figure 3-15, *Typical Solar Array and O&M Areas*, and Figure 3-16, *Representative Examples of Photovoltaic Panel/Mounting Configuration*, depicts representative examples of photovoltaic panel/mounting configurations.

The foundations for the mounting structures can extend up to 10 feet below ground, depending on the structure, soil conditions, and wind loads, and may be encased in concrete or utilize small concrete footings. Final solar panel layout and spacing would be optimized for project area characteristics and the desired energy production profile.

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.



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

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Figure 3-15. Typical Solar Array and O&M Areas

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Typical Fixed-Tilt Solar Panel Rows



Typical Single-Axis Tracking Solar Panels



Typical Dual-Axis Tracking Solar Panels



Typical Fixed-Tilt Mounting Structure



Typical Dual-Axis Mounting Structure

ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

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Figure 3-16. Representative Examples of Photovoltaic Panel/Mounting Configuration

Collection, Inverter, and Transformer Systems

Photovoltaic energy is delivered via cable to inverter stations, generally located near the center of each block of solar panels. Inverter stations typically comprise one or more inverter modules with a rated power of up to 7.5 MW each, a unit transformer, and voltage switch gear. The unit transformer and voltage switch gear are housed in steel enclosures, while the inverter module(s) are housed in cabinets. Depending on the vendor selected, the inverter station may lie within an enclosed or canopied metal structure, typically on a skid or concrete-mounted pad. Figure 3-17, *Representative Examples of Typical Inverter Stations*, depicts representative examples of typical inverter stations.

Energy Storage System

The proposed project may include one or more energy storage systems (ESS), located at or near a substation/switchyard (on-site or shared) and/or at the inverter stations, but possibly elsewhere on-site. Such large-scale ESSs would be up to 600 MW-AC in capacity and up to 25 acres in total area. ESSs consist of modular and scalable battery packs and battery control systems that conform to US national safety standards.

The ESS modules, which could include commercially available lithium or flow batteries, typically consist of standard International Organization for Standardization containers (approximately 40 feet in length by 8 feet in width by 8 feet in height) housed in pad- or post-mounted, stackable metal structures, but may also be housed in a dedicated building(s) in compliance with applicable regulations. The maximum height of a dedicated structure is not expected to exceed 25 feet. The actual dimensions and number of energy storage modules and structures vary depending on the application, supplier, and configuration chosen, as well as on off-taker/power purchase agreement requirements and on County building standards. The proposed project may share an ESS with one or more nearby solar projects or may operate one or more stand-alone ESS facilities within the project site. Figure 3-18, *Representative Examples of Typical Battery Storage Energy Systems*, depicts representative examples of typical ESSs.

The ESS would be unmanned, remotely controlled containers, which would be periodically inspected for maintenance purposes. The ESS would have a fire rating in conformance with Kern County and national ESS fire standard NFPA 855 and specialized fire suppression systems would be installed for each of the battery compartments, where required by NFPA 855 and UL9540A standards.

On Site Meteorological Station

A solar meteorological station would be on-site, the location of which would be determined at final project design. The meteorological station would include solar energy (irradiance) meters, in addition to an air temperature sensor and wind anemometer. It is anticipated that the maximum height of this equipment would be 20 feet.

Substation

Output from the inverter stations would be transferred via electrical conduits and electrical conductor wires to one or more on-site substation(s) or switchyard(s) (collectively referred to as a “substation” herein), or the Eland Substation. The proposed project and any associated ESS would have their own dedicated substation equipment located either within the project site or within the Eland Substation footprint. Dedicated equipment may incorporate several components, including auxiliary power transformers,

distribution cabinets, revenue metering systems, microwave transmission tower, and voltage switch gear. Each substation would occupy an area of approximately 5 acres, secured separately by a chain-link fence. The final location(s) would be determined before issuance of building permits.

Substations typically include a small control building (roughly 500 square feet) standing approximately 10 feet tall. The building is either prefabricated concrete or steel housing with rooms for the voltage switch gear and the metering equipment, a room for the station supply transformer, and a separate control technology room in which the main computer, the intrusion detection system, and the main distribution equipment are housed. Components of this building (e.g., control technology room and intrusion detection system) may alternatively be located at the O&M building(s). Figure 3-19, *Representative Example of Typical Substation Design*, depicts a representative example of a typical substation.



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 3-17. Representative Examples of Typical Inverter Stations



Figure 3-18. Representative Examples of Typical Battery Storage Energy Systems



Figure 3-19. Representative Example of Typical Substation Design

Generation-Transmission Line

From the proposed project's substation(s), power would be transmitted to the Los Angeles Department of Water and Power's Barren Ridge Substation via a 230 kV overhead and/or underground gen-tie line. The proposed gen-tie alignment is shown on Figure 3-2, *Project Site Boundaries*. The proposed project intends to share the Eland 1 Solar Facility's gen-tie line and ROW, which may require stringing additional line on the Eland 1 Solar Facility's transmission structures, or increasing the capacity of the Eland 1 Solar Facility's gen-tie by reconductoring the line with thicker cable. As needed, the Eland 1 Solar Facility's gen-tie would be sized to accommodate the proposed project. If the proposed project cannot share these facilities, a new gen-tie line would be developed within one of the routes previously analyzed in the previously approved Eland 1 Solar Project Supplemental Environmental Impact Report (State Clearinghouse No. 2012011029). The maximum height for all structures associated with the project would be 150 feet; however, overhead lines that would be mounted on monopoles higher than 100 feet tall would require review by the military authority responsible for operations in the project area, as designated in Figure 19.08.160 (*Military Review Requirements Map*) of the Kern County Zoning Ordinance.

Site Access

Construction and operation traffic would access the project site from Phillips Road, Gantt Road, and Neuralia Road or through the Eland 1 Solar Facility project site. The proposed project would require driveway improvements, to be designed and constructed per County and City code and regulations. Any off-site roadway improvements would be constructed in conformance with Caltrans and/or County and/or City code and regulations, as necessary and applicable.

Water Usage

Construction

During construction, water would be required for common construction-related purposes, including but not limited to dust suppression, soil compaction, and grading. Total water usage during the 12- to 18-month construction period is not expected to exceed 400 acre-feet. Water demand would be the same during normal or dry years. It is anticipated that water would be obtained from new or existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok Solar Facility projects, the Eland 1 Solar Facility project, or a commercial source. Temporary, portable water tanks may be placed on-site to store water for construction purposes. If the project proponent determines that off-site water would be used, the project proponent would submit evidence of an agreement to provide sufficient water quantities from the proposed off-site water purveyor(s). Portable restroom facilities would be provided to the workers during construction.

Operation

Water demand for panel washing and O&M domestic use (i.e., sinks and lavatories, and facilities maintenance) is not expected to exceed 50 acre-feet per year. It is anticipated that water would be obtained from new or existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok Solar Facility projects, the Eland 1 Solar Facility project, or a commercial source. If the project proponent determines that off-site water would be used, the project proponent would submit evidence of an agreement to provide sufficient water quantities from the proposed off-site water purveyor(s). A small water treatment system, consisting of a small filtration or reverse osmosis system, may be installed adjacent to the O&M building to provide deionized water for panel washing.

Water Storage Tank(s)

One or more aboveground water storage tanks with a total capacity of up to 50,000 gallons may be placed on-site near the O&M building. The storage tank(s) near the O&M building would have the appropriate fire department connections to be used for fire suppression purposes.

Operations and Maintenance Building

The proposed project may include an O&M building of approximately 40 feet by 80 feet in size, up to 15 feet in height with associated on-site unpaved parking. The O&M building would be steel framed, with metal siding and roof panels. The O&M building may include the following:

- Office
- Repair building/parts storage
- Control room
- Restroom
- Septic tank and leach field
- Potable water tank for handwashing

Septic tank, leach field, roads, driveways, and parking lot entrances would be constructed in accordance with Kern County and California City improvement standards. Parking spaces and walkways would be constructed in accordance with all California Accessibility Regulations. As previously mentioned above, the proposed project may share O&M facilities with one or more nearby solar projects in the area and/or may be remotely operated.

Project Site Security and Fencing

The project site may be enclosed within a chain-link fence with barbed wire measuring up to 8 feet in height (from finished grade). An intrusion alarm system may also be installed, comprised of sensor cables integrated into the perimeter fence, intrusion detection cabinets placed approximately every 1,500 feet along the perimeter fence, and an intrusions control unit, located either in the substation control room or at the O&M building, or similar technology. The proposed project may include additional security measures including, but not limited to, barbed wire, low voltage fencing with warning reflective signage, controlled access points, security alarms, security camera systems, sensor lights, and security guard vehicle patrols to deter trespassing and/or unauthorized activities that could interfere with operation of the proposed project.

Controlled access gates would be maintained at the main entrances to the project site. Project access would be provided to off-site emergency response teams that respond in the event of an “after-hours” emergency. Enclosure gates would be manually operated with a key provided in an identified key box location.

Project Site Lighting

Lighting used on-site would be minimal and is anticipated to be installed at the access gates, substation(s), O&M building(s), and inverters to allow for access and emergency maintenance. Site lighting may include motion sensor lights for security purposes. All project site lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as required by Kern County Ordinance (Chapter 19.81) – Outdoor Lighting – Dark Skies requirements. Lighting used on-site would be of the lowest intensity foot-candle level, in compliance with any applicable regulations, measured at the property line after dark.

Construction Activities

The construction period for the proposed project from site preparation through construction, testing, and commercial operation is expected to commence as early as fourth quarter 2021 and would extend for approximately 12 to 18 months.

Construction of the proposed project would include the following activities:

- Site preparation
- Access and internal circulation roads
- Grading and earthwork
- Concrete foundations
- Structural steel work
- Panel installation

- Electrical/instrumentation work
- Collector line installation
- Stormwater management facilities
- Architecture and landscaping, if required
- Gen-tie lines(s)

No roadways would be affected by the proposed project, except during the construction period. Construction traffic would access the project site from Philips Road, Gantt Road, and Neuralia Road, or through the Eland 1 Solar Facility project site. It is estimated that up to 1,000 workers per day (during peak construction periods) would be required.

Heavy construction is expected to occur between 6:00 a.m. and 5:00 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. If weekend work is required, it is anticipated that such activities would occur between 8:00 a.m. and 9:00 p.m. Low level noise activities may potentially occur between the hours of 10:00 p.m. and 7:00 a.m. as long as the noise is below County and City noise standards. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Materials and supplies would be delivered to the project site by truck. 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.

Earthmoving activities are expected to be limited to the construction of the access roads, any O&M building(s), substation(s), water storage tank, construction of solar panel foundation supports, ESSs, and stormwater protection or storage (detention) facilities. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas.

Work Force

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 proposed project would require an operational staff of up to 20 full-time employees. Typically, the majority of the staff would work during the day shift (sunrise to sunset) and the remainder during the night shifts and weekends. Each employee shift would consist of approximately five persons, stationed at the O&M building. As previously mentioned, it is possible that the proposed project could share O&M, substation, and/or transmission facilities with one or more nearby renewable energy projects (such as the Eland 1 Solar Facility). In such a scenario, the projects would share personnel, thereby potentially reducing on-site staff. The facility would operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available.

Project Features and Best Management Practices

The following sections describe standard project features and best management practices that would be applied during construction and long-term operation of the project to maintain safety and minimize or avoid environmental impacts.

Waste and Hazardous Materials Management

The proposed project would have minimal levels of materials on-site that have been defined as hazardous under 40 Code of Federal Regulations, Part 261. The following materials are expected to be used during the construction, operation, and long-term maintenance of the proposed project:

- Insulating oil – used for electrical equipment
- Lubricating oil – used for maintenance vehicles
- Various solvents/detergents – equipment cleaning
- Gasoline – used for maintenance vehicles

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

Spill Prevention and Containment

During construction, aboveground storage tanks would be used as temporary fueling stations. Temporary tanks used during construction would have double containment to safeguard against any accidental spills or releases. With the exception of the project's transformers (analyzed as part of the preciously approve Eland 1 Solar Facility project), which have their own secondary containment, less than 55 gallons of hazardous materials would be stored on-site during project operations. Spill prevention and containment for construction and operation of the proposed project will adhere to the US Environmental Protection Agency's guidance on Spill Prevention Control and Countermeasures.

Wastewater/Septic System

During construction, portable toilets and washing stations will be used based on the number of employees on-site. These units will be regularly serviced. During operations, a standard on-site septic tank and leach field may be used at the O&M building(s) to dispose of sanitary wastewater, designed to meet operation and maintenance guidelines required by Kern County laws, ordinances, regulations, and standards. If no O&M buildings are installed on-site, no septic systems would be installed.

Inert Solids

Inert solid wastes resulting from construction activities may include recyclable items such as paper, cardboard, solid concrete and block, metals, wire, glass, type 1-4 plastics, drywall, wood, and lubricating oils. Non-recyclable items include insulation, other plastics, food waste, vinyl flooring and base, carpeting,

paint containers, packing materials, and other construction wastes. A Construction Waste Management Plan will be prepared for review by the County. Consistent with local regulations and the California Green Building Code, the plan would provide for diversion of a minimum of 50 percent of construction waste from landfills.

Chemical Storage

Chemical storage tanks (if any) would be designed and installed to meet applicable local and state regulations. Any wastes classified as hazardous such as solvents, degreasing agents, concrete curing compounds, paints, adhesives, chemicals, or chemical containers will be stored (in an approved storage facility/shed/structure) and disposed of as required by local and state regulations. Hazardous wastes exceeding threshold quantities (one 55-gallon drum) are not expected.

Health and Safety

Safety precautions and emergency systems will be implemented as part of the design and construction of the proposed project to ensure safe and reliable operation. Administrative controls will include classroom and hands-on training in operating and maintenance procedures, general safety items, and a planned maintenance program. These will work with the system design and monitoring features to enhance safety and reliability.

The proposed project will have an Emergency Response Plan (ERP). The ERP will address potential emergencies including chemical releases, fires, and injuries. All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

Decommissioning

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 (PPA) with a utility or other power off-taker. Upon completion of the PPA term, the project operator may, at its discretion, choose to enter into a subsequent PPA or decommission and remove the system and its components. Upon decommissioning, the solar facility could be converted to other uses in accordance with applicable land use regulations in effect at that time.

It is anticipated that, during project decommissioning, project structures that would not be needed for subsequent use would be removed from the project site. 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, as well as 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 preconstruction condition unless they may be used for subsequent land use. The area would

be thoroughly cleaned and all debris removed. Materials would be recycled to the extent feasible, with the remainder disposed of in landfills in compliance with all applicable laws.

3.7 Entitlements Required

The anticipated approvals needed for the project include changes in zone classification, adoption of conditional use permits, and general plan amendments to the Circulation Element of the Kern County General Plan. 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, but not limited to, those listed below:

Kern County (Lead Agency)

- Consideration and certification of Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Adoption of proposed Mitigation Measure Monitoring Program
- Approval by the Kern County Board of Supervisors for proposed changes in zone classification
- Approval by the Kern County Board of Supervisors for proposed conditional use permits for the project site
- Approval by the Kern County Board of Supervisors for proposed General Plan Amendments to the Circulation Element
- Kern County grading and building permits
- Kern County encroachment permits
- Kern County Franchise Agreements
- Kern County public road(s) and easement(s) nonsummary vacation(s)
- Kern County Fire Safety Plan

California City (Responsible Agency)

- Consideration and certification of Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Adoption of proposed Mitigation Measure Monitoring Program
- Approval by the Planning Commission for proposed changes in zone classification (if required)
- Approval by the Planning Commission for proposed conditional use permits for the project site
- California City grading and building permits
- California City franchise agreements/business license
- California City encroachment permit

- California City public road(s) and easement(s) vacation(s) (if required)
- California City Fire Strategic Plan
- Development agreement (if required)

Other Responsible Agency Approvals

- Federal Aviation Administration review
- U.S. Fish and Wildlife Service Habitat Conservation Plan (if required)
- Bureau of Land Management Right of Way Agreement for Limited Improvements for Access Roads and Gen-tie Line (if required)
- California Department of Fish and Wildlife (CDFW), Lake and Streambed Alteration Agreement or Incidental Take Permit or Habitat Conservation Plan (if required)
- State Water Resources Control Board, National Pollutant Discharge Elimination System Construction General Permit
- California Department of Transportation Right-of-Way Encroachment Permit, and Permit for Transport of Oversized Loads (if required)
- Union Pacific, BSNF Railroad Wireline Crossing Agreement
- Eastern Kern County 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 be required for the proposed project.

3.8 Cumulative Projects

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

According to the CEQA Guidelines:

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

- (a) *The individual effects may be changes resulting from a single project or a number of separate projects.*

- (b) *The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CCR, Title 14, Division 6, Chapter 3, Section 15355).*

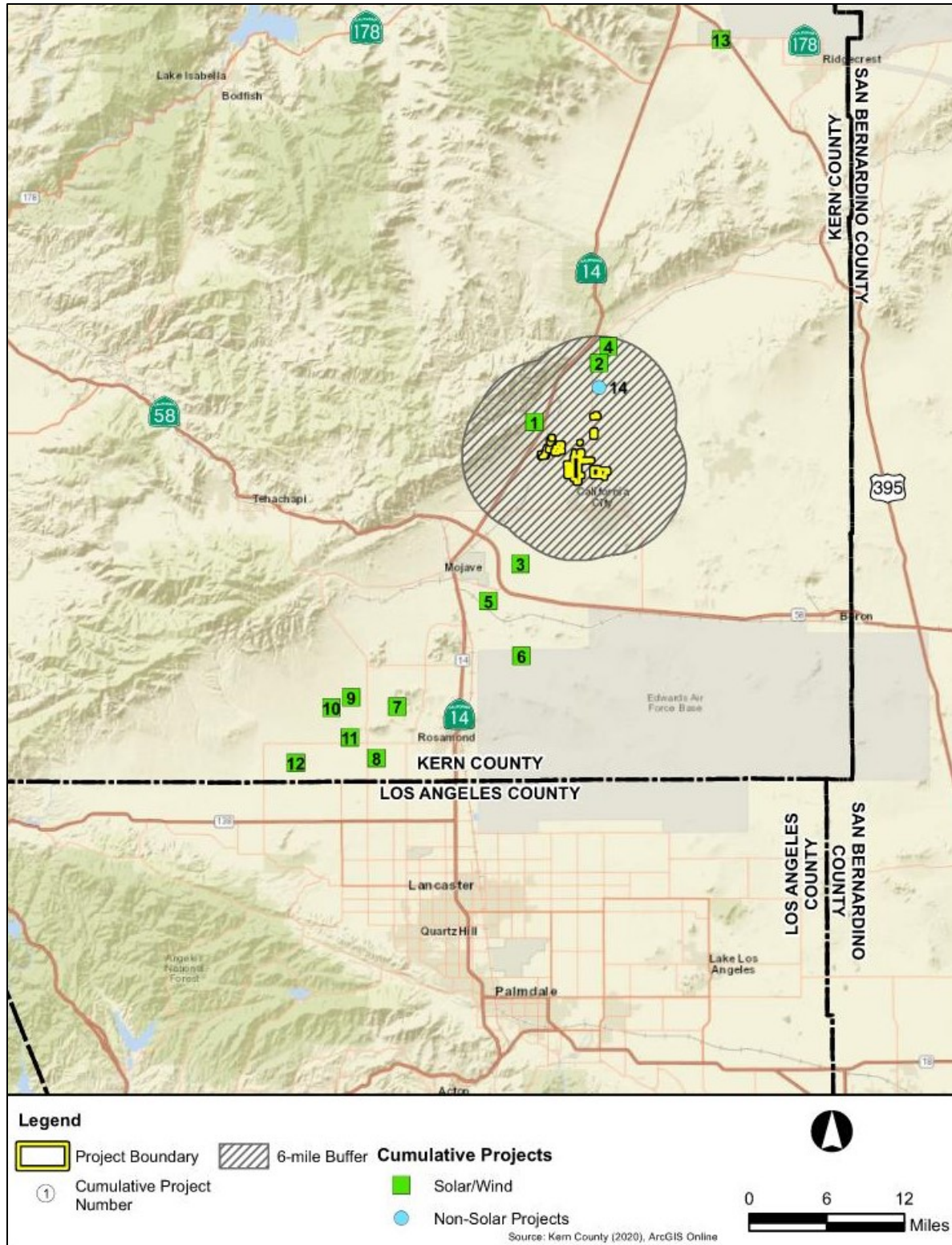
In addition, as stated in CEQA Guidelines, it should be noted that:

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

Cumulative impact discussions for each environmental topic area are provided at the end of each technical analysis presented in Chapter 4 of this Draft 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).

Unless otherwise noted in each chapter, the geographic scope for the cumulative impact analysis is the western Antelope Valley. The western Antelope Valley includes portions of the southeast corner of Kern County and portions of northern Los Angeles County. The valley is formed by the Tehachapi Mountains to the northwest and San Gabriel Mountains to the southwest. SR-14 is considered the eastern boundary of this area. The western Antelope Valley is triangularly shaped and is about 35 miles from west to east and 40 miles from north to south at its widest points. This geographic scope is selected because of its relatively uniform terrain, soil conditions, climate, and habitat value; its low population and development density relative to areas east of SR-14; and the region’s common groundwater basin and water supply considerations. SR-14 is a major north-south route in the area, dividing the western Antelope Valley from the rest of the Mojave Desert. The Mojave Desert broadens considerably east of SR-14 as the Tehachapi Mountains run north and the San Gabriel Mountains run southeast. East of SR-14, the valley does not feature the same mountain viewsheds found in the western Antelope Valley, and includes more densely developed areas, including the community of Rosamond, the cities of Lancaster and Palmdale, Mojave Air & Space Port, Edwards Air Force Base, and U.S. Air Force Plant 42. Projects within Lancaster and Palmdale’s urban cores are not considered to be part of the Western Antelope Valley. These projects are of a distinctly urban character, and in many respects would not have the same type of potential impacts as the project and others in the western Antelope Valley. Further, inclusion of urban projects could dilute, improperly magnify, or otherwise impair analysis of certain project impact areas. However, when appropriate (as determined by the impact being analyzed), a smaller or larger geographic scope was selected.

Table 3-3, *Cumulative Projects List*, shows the related projects considered in the cumulative analysis. Figure 3-20, *Cumulative Projects Map*, shows the approximate location of the proposed, approved, constructed, and operational solar projects, as well as other non-solar projects considered in the cumulative analysis.



ZCC 24, Map No. 152
 CUP 28, Map No. 152

GPA 10, Map No. 152
 CUP 19-04 (California City)

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Figure 3-20. Cumulative Projects Map

Table 3-3. Cumulative Projects List

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/Sq. Ft	Project Status
Projects within 1-mile of Project Site (excluding California City projects)								
1	Eland 1 Solar Facility	South of Munsey Road, east and west of Neuralia Road, east of SR 14, and north and south of Phillips Road	500 MW solar facility	GPA, ZCC, CUP	GPA 9, Map 152; GPA 1, Map 152-28; ZCC 11, Map 152; ZCC 12, Map 152; ZCC 1, Map 152-28; ZCC 13, Map 152; CUP 23, Map 152; CUP 24, Map 152; CUP 25, Map 152; CUP 26, Map 152; CUP 3, Map 152-28	multiple	2,652.7	Approved 2019; not constructed
Projects within 6-miles of Project Site (excluding California City Projects)								
2	Solar CA, LLC	North of Munsey Road and east of Neuralia Road	135 MW solar facility	CUP	--	multiple	723	In Process
3	Bellefield Solar	Unincorporated Kern County and City of California City	1,500 MW solar facility and energy storage system	CUP, ZCC, GPA	GPA 2, Map 195; ZCC 2, Map 195; ZCC 57, Map 196; CUP 1, Map 195; CUP 57, Map 196; SPA 31, Map 196	multiple	8,371	In Process
4	Nautilus Solar Energy (Cantil Solar Project)	Southeast corner of the Valley Road and Cantil Road intersection	9 MW solar facility	ZCC, CUP	ZCC 12, Map 133; CUP 12, Map 133	181-040-01	77	In Process
Other Solar Projects in Eastern Kern Vicinity (excluding California City Projects)								
5	Sanborn Solar	South of SR 58 and east of SR 14	300 MW solar facility	ZCC, CUP, SPA	ZCC 56, Map 196; ZCC 2, Map 212; ZCC 59, Map 213; CUP 45, Map 196; CUP 5, Map 212; CUP 66, Map 213	multiple	2,006	Approved
6	Edwards AFB Solar	Northwest corner of Edwards Air Force Base, at the intersection	600 MW solar facility on	Franchise Agreements	Franchise Agreements	multiple	3,500	Approved

Table 3-3. Cumulative Projects List, continued

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/Sq. Ft	Project Status
		of Lone Butte Road and East Trotter Avenue	Edwards Air Force Base and					
7	RE Rosamond	Northwest Favorito and 65 th Street	20 MW solar facility	ZCC, CUP	CUP 3, Map 231-3; ZCC 1, Map 231-3; SPA 1, Map 231-3	252-013-01	320	In Process
8	Raceway 2.0 Solar	Western extent of the Mojave Desert near Rosamond, between Rosamond Boulevard and Avenue A, and between 70th Street West and 90th Street West	291 MW solar facility	GPA, ZCC, CUP	SPA 33, Map 231; ZCC 154, Map 231; CUP 116 Map 231; SPA 34, Map 231; SPA 35, Map 231; ZCC 155, Map 231; CUP 117, Map 231; SPA 36, Map 231; SPA 37, Map 231; ZCC 156, Map 231; CUP 118, Map 231; SPA 38, Map 231; CUP 119, Map 231; CUP 4, Map 231-20; SPA 39, Map 231; SPA 3, Map 231-20; Cancellation of a Williamson Act Contract; SPA 5, Map 231-21; SPA 5, Map 231-28; ZCC 3, Map 231-21; ZCC 3, Map 231-28; CUP 3, Map 231-21; CUP 7, Map 231-28; SPA 6, Map 231-21; SPA 6, Map 231-28; SPA 7, Map 231-21; ZCC 4, Map 231-21; CUP 4, Map 231-21	multiple	1,311	In Process
9	IP Solar Company		CUP for solar facility	CUP	CUP, Map 215	474-120-04	40	Construction has not commenced
10	Big Beau Solar	Southeast portion of Kern County approximately 12 miles southwest of SR-58 and approximately 9 miles east of SR-14	128 MW solar facility	GPA, SPA, ZCC, CUP	GPA 4, Map 215; SPA 32, Map 232; ZCC 13, Map 215; ZCC 44, Map 232; CUP 13, Map 215; CUP 41, Map 232; CUP 14, Map 215; CUP 42, Map 232; CUP 15, Map 215; CUP 43, Map 215	multiple	2,285	Approved 2020; not constructed

Table 3-3. Cumulative Projects List, continued

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/Sq. Ft	Project Status
11	AVEP Solar	South of Dawn Road, west of 95th Street West, north Avenue A, and east of 130th Street West	375 MW solar facility	CUP, ZCC, GPA	SPA to Willow Springs Specific Plan and Circulation Plan; ZCC to A FPS; CUP to allow for solar PV facility	358-030-19; multiple	2,117	Approved
12	Rosamond 7 Solar	North of intersection of Rosamond Blvd and 130 th Street West; South of Rosamond Blvd and 110 th Street West	150 MW solar facility	SPA, ZCC, CUP	CUP 25, Map 232; SPA14, Map 232; ZCC 31, Map 232	multiple	1,175	In Process
13	Robbie Barker	Located east of the North Brown Road and Inyokern Road intersection	Solar facility	SPA, CUP, LLA	CUP 23, Map 47; CUP 27, Map 47; SPA 4, Map 47; LLA 48-19	multiple	166	In Process
Other Non-solar Projects near Project Site (excluding California City projects)								
14	Sprint by Eukon Group	APN 469-010-02	150-foot Wireless telecommunication facility	CUP	--	469-010-02		Approved

4.1.1 Introduction

This section of the EIR discusses impacts on aesthetic values, which include the existing visual character and visual quality of the project site and the surrounding landscape. Potential effects on aesthetics are evaluated relative to important visual features (e.g., scenic highways, vistas, or areas subject to visual landscape management policies) that occur in the project vicinity and the viewers that would be affected by visual change. The visual change that would result from the project is determined by comparing the existing visual conditions to simulated conditions where the project features would be most visible. The types and extent of adverse visual impacts are then evaluated in conjunction with viewer characteristics to determine if the impacts could be significant.

The assessment of the existing visual conditions and impacts on aesthetics was conducted by Panorama Environmental, Inc. as a consultant to the Kern County Department of Planning and Natural Resources. The visual simulations included in this section were prepared by the project proponent's consultant, Stantec Consulting Services Inc. (2021b), as part of a Visual Resources Technical Report that is provided as Appendix B-1 of this EIR. It should be noted that the visual simulations included in Appendix B-1 include the approved, but not yet constructed, Eland Solar Project. For discussion in the analysis, additional visual simulations excluding the Eland Solar Project were prepared and disclosed. The assessment of potential glare impacts is based on the findings of a Glare Study prepared by Dudek (2021), which is provided as Appendix B-2 of this EIR.

Visual Concepts and Terminology

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

The following terms and concepts are used to describe and assess the aesthetic setting and impacts from the project.

- *Key Observation Points (KOPs)*. KOPs are viewpoints (VPs) on a travel route or at a sensitive use area, such as public roadway, park, or residential neighborhood, where the view of a project would be the most revealing.
- *Scenic Highways*. Scenic highways include any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency.
- *Scenic Quality*. Scenic quality refers to the visual appeal of a landscape relative to desired scenic values and the abundance or scarcity of similar qualities in the region. Scenic quality can be measured by evaluating the presence or absence of scenic features and the intrusion of other features that detract from the scenic features.

- *Scenic Vistas.* Scenic vistas are designated viewing areas or areas 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.
- *Viewers and Viewer Sensitivity.* Viewer sensitivity refers to responses to visual changes in a landscape that can be 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 be stationary or mobile and involve varying circumstances that encourage close observation of a landscape (i.e., recreational activities) or discourage close observation of a landscape (i.e., commuting in traffic). Residential viewers have extended viewing periods and are generally considered to have high visual sensitivity. For this reason, residential views are typically considered sensitive; however, the California Environmental Quality Act (CEQA) does not require an analysis of impacts on private views. Viewers from public parks, recreational trails, and/or culturally important sites may also have high visual sensitivities; therefore, such locations are considered sensitive VPs. People located in commercial, military, and industrial areas are not typically focused on views and such areas do not promote typical scenic values; therefore, viewers in these locations are assumed to have low sensitivity. In general, residents and others participating in recreational activities (e.g., hikers, equestrians, tourists) are expected to be more concerned with scenery and landscape character. Local motorists who commute daily through the same landscape may have a moderate concern for scenery and landscape character, while regional motorists or people who work within highly urbanized areas are expected to have a lower concern for scenery and landscape character.
- *Viewing Distance Zones.* Landscapes can be subdivided into viewing distance zones based on relative visibility from travel routes or observation points. The distance zones are immediate foreground (0 to 0.25 miles away), foreground (0.25 to 1 mile away), middleground (1 to 3 miles away), and background (greater than 3 miles away).

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 its form and scale would be most perceptible. When the same 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 middleground, some detail is evident in the foreground and landscape elements are seen in context with landforms and vegetation patterns in the background.

- *Viewing Duration.* Viewing duration can affect viewer sensitivity based on the amount of time a landscape and visual changes within it are viewed. For example, motorists traveling at high speeds are less likely to be sensitive to visual change because the viewing duration is short, while stationary viewers or viewers traveling at slow speeds are more likely to be sensitive to visual change because the viewing duration is long.
- *Viewpoints (VPs).* VPs are locations identified for inventorying the most prominent views of a project site and visual character in the surrounding area.
- *Viewshed.* Viewshed is defined as the surrounding geographic area from which the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations. "Project viewshed" is used to describe the area surrounding a project site where a person standing on the ground or driving a vehicle can view the project site.

- *Visual Sensitivity.* Visual sensitivity refers to the overall measure of an existing landscape's susceptibility to adverse visual changes. When viewing the same landscape, viewers may have different responses to that landscape and any visual changes that would result from a project, based upon their values, familiarity, concern, or expectations for that landscape and its scenic quality. Visual changes in landscapes affect viewers differently because each person's attachment to and value for a particular landscape is unique. Landscape sensitivity is a concept used to generalize expectations about viewer response to visual changes in a specific landscape.

4.1.2 Environmental Setting

Regional Character

The project site is situated within southeastern Kern County, California, at the western edge of the Mojave Desert. The project lies approximately 60 miles south-southeast of Bakersfield in the northern portion of Fremont Valley. The project region is characterized by a large sloping valley floor, bordered on the east by the southern end of the Sierra Nevada Mountains, which reach to approximately 4,000 feet above the valley floor, and to the northeast by the Rand and El Paso Mountains, which stand about 2,000–3,000 feet above the project area. The area east of the project is interspersed by occasional low rolling desert hills. The soil of these hills is often a distinctive dark red that contrasts with the tan and orange soils of the valley landscape. The project region is home to a variety of mostly low-growing desert vegetation, such as creosote, juniper, and sagebrush. This portion of the valley also hosts occasional Joshua trees, which punctuate the lower growing bushes with distinctive character.

Residential and commercial development occur within neighboring areas of Mojave and California City, and in the local residential community of Fremont. Several solar facilities are located on the flat valley floor in the vicinity of the project. These include the Barren Ridge Project, located across State Route (SR) 14, approximately 2.5 miles west, as well as the Beacon and Springbok Projects, located approximately 0.75 miles to 2.5 miles north of the proposed project. Other notable development in the region includes the SR-14 and SR-58 corridors; the California City Municipal Airport directly south of the project; extensive wind energy development to the southwest; the Honda Proving Center of California approximately 2 miles north of the project; and the Hyundai-Kia Proving Grounds approximately 6 miles south of the project. The Honda Proving Center of California is a 4,255-acre vehicle testing center with a 7.5-mile oval track and 4.5-mile winding road, modeled after common North American roads and desert racing conditions (New York Times 2011). The Hyundai-Kia Proving Grounds site include a 4,300-acre facility designed to test Hyundai's vehicle safety systems, with a 6.4-mile-long oval track, and a 30,000-square-foot office complex (Hyundai 2021). The remaining areas to the east and west of the project have little to no development that is visually prominent.

A segment of the Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail, or PCT) traverses through the Sierra Nevada Mountains approximately 10 miles west of the project site. The terrain generally obstructs views toward the project site from the PCT, but there may be occasional vistas of the expansive valley floor toward the east, in the direction of the project site. These vistas may also include views of the SR-14 corridor and existing wind and solar development.

The 10-mile project site viewshed is shown on Figure 4.1-1, *Project Site Viewshed within 10 Miles*, which illustrates potential line-of-sight visibility to the project site. The viewshed is based on a bare earth model that does not consider intervening vegetation or structures, or atmospheric conditions, that would block or

limit views. The model uses a digital elevation model with 10-meter cells; therefore, the viewshed results are approximate.

Local Character

The project site comprises 75 parcels east of SR-14, straddling Phillips Road, north of the California City Municipal Airport and south of the unincorporated communities of Cinco and Rancho Seco. The project would also include a gen-tie line to be co-located with the gen-tie line that will be constructed for the Eland 1 and would deliver power from the project site to the Los Angeles Department of Water and Power (LADWP) Barren Ridge Substation located approximately 2 miles northwest. The Eland 1 project is a 500 MW solar project covering approximately 2,653 acres with a 230 kV gen-tie line. The project was approved by Kern County in April 2019 and the gen-tie in February 2020, but has not yet been constructed. Depending on final engineering and design specifications for both the Kudu and Eland 1 projects and their gen-tie line routes approved by Kern County.

In addition, several alternative routes for a gen-tie line that were considered in the EIR prepared for the Eland 1 Solar Project could potentially be selected. The final gen-tie location would be determined in accordance with Kern County transmission line planning requirements.

The project is located approximately 0.25 miles from the Fremont residential community, which is generally contained between Phillips Road, Cheyenne Boulevard, Yuma Avenue, and Yucaipa Street. In addition, a few residential dwellings are dispersed to the east and northeast of the Fremont community, on the west side of Neuralia Road. These residential areas are within unincorporated portions of Kern County north of California City.

The project site landscape consists largely of undeveloped lands composed of privately-owned parcels and various dirt roads. A single line railroad track (Union Pacific) runs roughly north-south through the western site parcels. An electrical distribution line is located parallel to Neuralia Road. Transmission lines, transportation corridors, and solar energy facilities are discernible in the more distant views throughout the project area, most notably at the base of the Sierra Nevada Mountains to the west and the upper Fremont Valley to the north.

The project site is relatively flat with elevations ranging from about 2,100 feet to 2,400 feet above mean sea level. The project parcels can be seen from immediately surrounding areas, due to the relatively flat topography and low-growing desert vegetation with few natural screening elements. The visual characteristics of the project site are relatively common in the region. The landscape is generally characterized by its expansive views of the flat Mojave Desert bounded by foothills and mountainous terrain. Pale tones of green, brown, red, and gray are visible in the desert vegetation and exposed earth surface. The landscape is visually striking, particularly from views toward the north and west and where existing development is not easily discernible.

Figure 4.1-2, *Viewpoints and Key Observation Points*, illustrates the locations of viewpoints addressed in this section where the photographs were taken and the view direction. Photographs showing existing visual conditions of the project site as seen from the surrounding area are provided in Figure 4.1-3, *Photographs of Existing Visual Conditions at Viewpoints*.

Viewers

Motorists traveling along SR-14 would have views of the project site. Views along this segment of SR-14 are expansive and generally characterized by the sparsely developed desert landscape, to the east and south, and the slopes of the Sierra Nevada Mountains, to the west and north. The closest viewing locations along this highway corridor would be from near Phillips Road, approximately 0.8 miles from the nearest edge of the project site. These motorists are expected to have a low viewer sensitivity.

Motorists traveling along local roadways in the area (i.e., Phillips Road, Neuralia Road, California City Boulevard, and others) would have intermittent views of the project site, depending on the specific location. The closest viewing locations from roadways adjacent to the project site would be approximately 100 feet from the nearest edge of the project site. Motorists along these local roadways are expected to have a low to moderate viewer sensitivity.

Noticeable views of the project site from recreational areas are not expected due to the separation distances (over two miles) and flat terrain. The photo from VP 6 is a view from the BLM Jawbone Station Visitors Center, located approximately 5 miles north of the project. A limited number of residences within the community of Fremont would have views toward the project site with distances as little as 0.25 miles.

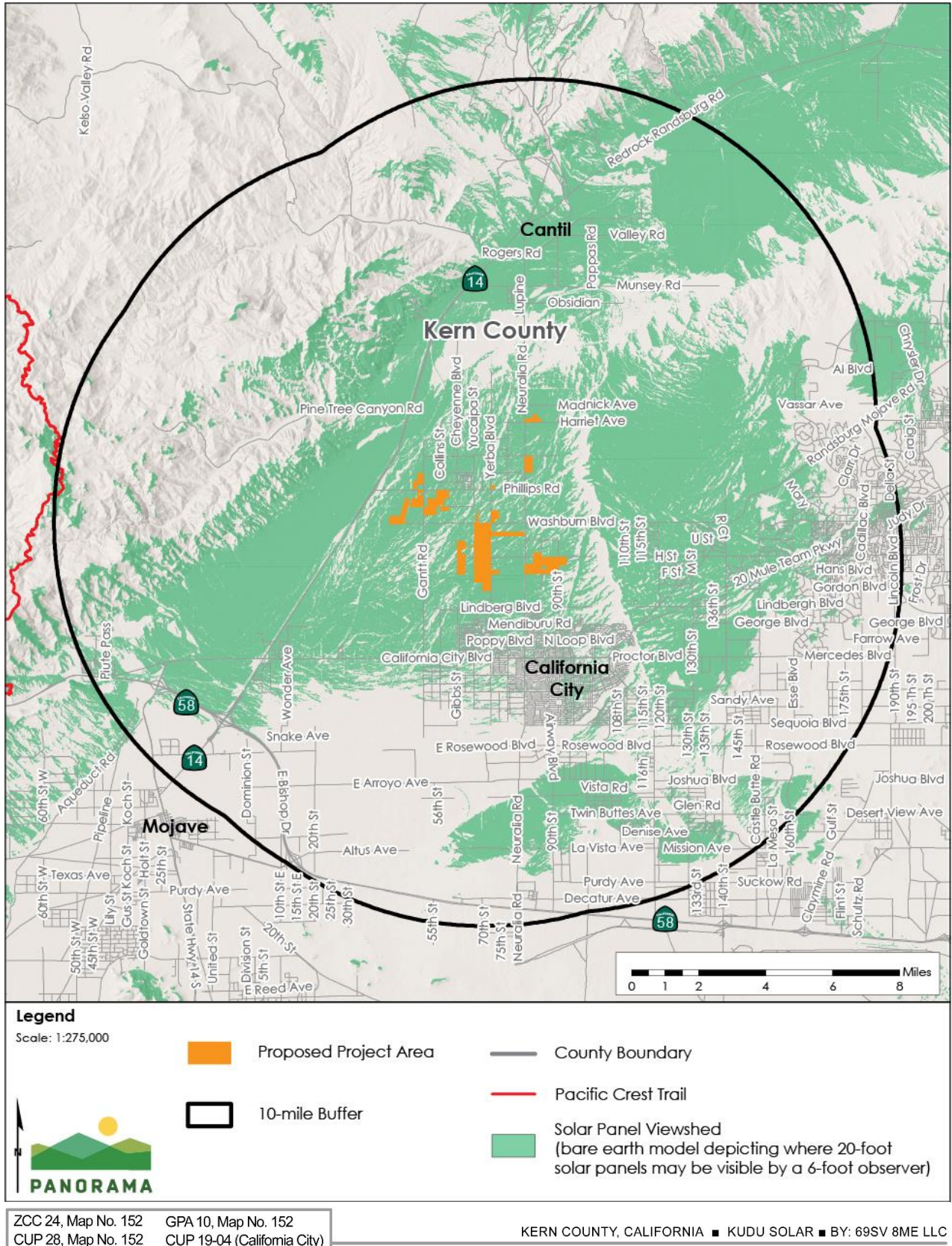
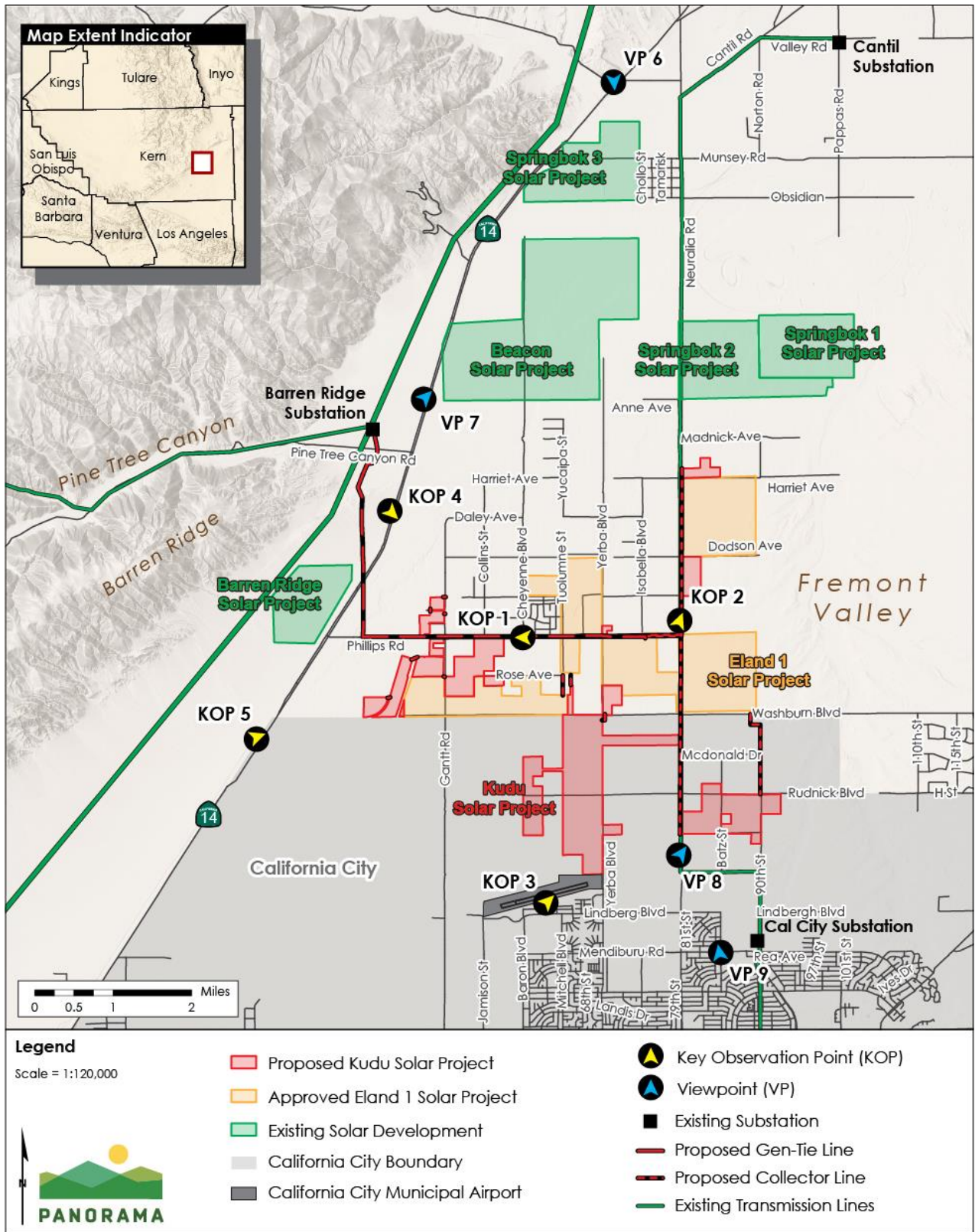


Figure 4.1-1. Project Site Viewshed within 10 Miles



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-2. Viewpoints and Key Observation Points



VP 1/KOP 1: Phillips Rd at Cheyenne Blvd (facing west)



VP 2/KOP 2: Neuralia Rd north of Phillips Rd (facing north-northeast)



VP 3/KOP 3: California City Municipal Airport (facing northeast)



VP 4/KOP 4: Northbound SR-14 north of Phillips Rd (facing southeast)

ZCC 24, Map No. 152	GPA 10, Map No. 152
CUP 28, Map No. 152	CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-3. Photographs of Existing Visual Conditions at Viewpoints



VP 5/KOP 5: Northbound SR 14 south of Phillips Rd (facing east-northeast)



VP 6: BLM Jawbone Station Visitors Center along SR 14 (facing south)



VP 7: Adjacent northbound SR 14 near Beacon Solar Project (facing northeast)



VP 8: Neuralia Rd near Municipal Airport (facing northeast)

ZCC 24, Map No. 152	GPA 10, Map No. 152
CUP 28, Map No. 152	CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-3. Photographs of Existing Visual Conditions at Viewpoints (Continued)



VP 9: California City High School (facing north)

ZCC 24, Map No. 152	GPA 10, Map No. 152
CUP 28, Map No. 152	CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-3. Photographs of Existing Visual Conditions at Viewpoints (Continued)

Scenic Highways

According to the California Department of Transportation's (Caltrans) California Scenic Highway mapping system, there are no designated scenic highways within Kern County (see Section 4.1.3, *Regulatory Setting*, below for more information on the State Scenic Highway program). SR-14 (between SR-58 and Highway 395) and SR-58 (between SR-14 and Barstow) are designated as eligible scenic highways; however, neither have been formally designated as a State scenic highway (Caltrans 2019).

In addition to the State Scenic Highway Program, the Kern County General Plan Circulation Element (refer to Section 4.1.3, *Regulatory Setting*, for more information) designates scenic routes and defines a scenic route as any freeway, highway, road, or other public right-of-way that 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. As noted above, SR-14 and SR-58 are not officially designated as state scenic highways and are not considered scenic highways for this analysis. As part of the Circulation Element goals, policies, and implementation measures, Kern County adopted an SC (Scenic Corridor Combining) District to designate areas that contain unique visual and scenic resources as viewed from a major highway or freeway. The project site is not within an SC (Scenic Corridor Combining) District.

Lighting Environment

The project site is not currently lit at night. Off-site fixed lighting in surrounding areas includes small light fixtures on buildings and street lighting along roadways and highways, residences, the California City Airport, the Mojave Air and Space Port, Honda Proving Center, and Hyundai-Kia Proving Grounds. The main sources of nighttime lighting in the area are from vehicle lights along SR-14 and local roadways, and the California City Municipal Airport. These lighting sources produce a moderate amount of nighttime lighting in the project area.

4.1.3 Regulatory Setting

Federal

National Scenic Byways Program

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration (FHWA). 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 scenic qualities (FHWA 2021a). There are no National Scenic Byways or All-American Roads within the vicinity of the project site (FHWA 2021b).

U.S. Department of the Interior, National Park Service, National Trails System Act

The National Trails System Act of 1969 seeks to preserve scenic and natural qualities along trails. The National Trails System Act assigns management responsibility for trails to various federal resource agencies, depending on which agency holds jurisdiction over the land on which the trail is located in a given area. The PCT was created under the National Trails System Act to provide for outdoor recreation opportunities and the conservation of significant scenic, historic, natural, or cultural qualities (National Park Service 2016). PCT's southern terminus is on the U.S. border with Mexico, just south of Campo, California, and its northern terminus is on the Canada-US border on the edge of Manning Park in British Columbia; its corridor through the U.S. is in the states of California, Oregon, and Washington. As stated previously, the PCT is located approximately 10 miles west of the project site. The project is within the viewshed of a short segment of the trail (Figure 4.1-1).

State

California State Scenic Highway Program

The California Scenic Highway Program was created by the legislature in 1963 and is managed by the Landscape Architecture Division of Caltrans. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon travelers' enjoyment of the view. State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

No Kern County highways are officially designated as State scenic highways. The segment of SR-14 between Highway 395 and SR-58 is eligible for designation as a state scenic highway, but it has not been formally designated (Caltrans 2019). This route lies approximately 1 mile west of the project parcels and the proposed gen-tie crosses the roadway. Additionally, the segment of SR-58 between Mojave and Barstow (within 8 miles of the project parcels) is eligible for designation as a state scenic highway, but it has not been formally designated (Caltrans 2019).

Local

Construction and operation of the solar facility would be subject to policies, goals, regulations, and implementation measures related to aesthetics contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, Kern County Code of Building Regulations, and California City General Plan.

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan related to aesthetics that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to particular developments, 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.

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

The Kern County General Plan Circulation Element 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 as mentioned above and to what extent development has encroached on the scenic views. The County also has to prepare and adopt a plan and program for the protection and enhancement of adjacent roadside viewshed land. As such, goals, policies, and implementation measures regarding scenic routes in the Circulation Element are focused on the need for the County to further develop its scenic route program and measures to protect scenic resources, which are not applicable to the project.

The Kern County General Plan acknowledges three routes identified as part of the California Scenic Highways Master Plan that are designated eligible state scenic highway within the county. Route 1, which begins north of Mojave and continues to the Inyo County line, consists of SR-14 and Highway 395. Route 2 consists of SR-58 between Mojave and Boron. Route 3 consists of 5 miles of SR-14 in northwest Kern County. The project is situated within 1 mile of Route 1 and the proposed gen-tie line crosses this route (SR-58). The Kern County General Plan has no policies that address eligible state scenic highways. As there are no officially designated scenic routes in the project area, there are no policies regarding development within scenic routes that would apply to the project.

The Kern County General Plan includes goals and policies for design features of development projects in order to reduce their impacts to scenic resources. The goals, policies, and implementation measures that apply to the project are provided below. Applicable goals, policies, and implementation measures that are more general in nature are not included but are incorporated herein by reference.

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

1.10.7 Light and Glare

Policies

- Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measures

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

Chapter 5: of the Energy Element

5.4.7 Transmission Lines

Goal

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

Policy

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

City of California City General Plan

A portion of the project (approximately 1,282 acres) lies within the City of California City and the City of California City General Plan boundaries. The California City General Plan (California City 2009) includes goals and policies related to aesthetics that would apply to the project. These goals and policies pertain to reducing visual impacts from new industrial development and design recommendations, such as utilizing screening walls or landscaping, height limitations, development setbacks, and lighting restrictions adjacent to residential land use designations, and scenic roads and highways. California City's goals and policies applicable to the project, where located within the city boundary, include the following:

Industrial Development

- Require that industrial uses provide design features, such as screen walls, landscaping, and height, setback and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to aesthetics, light and glare, noise, and vibration. Minimize impacts of industrial-related traffic, noise, air quality, and visual aesthetics on adjacent residential parcels through the use of site plan review and improvement standards.

Design/Image Policies

- Ensure that light and glare from discretionary new development projects are minimized.
- The City shall promote Dark Sky principles in future residential, commercial, and industrial development.
 - All exterior lighting shall be designed to point downward in a manner that will reduce light and glare pollution onto neighboring properties and roadways.
 - All security lighting shall be connected to a timer and/or motion detector.
 - Exterior lighting shall be connected to a timer and/or motion detector.
 - Exterior lighting shall use one of the following types of light: Metal Halide, High Pressure Sodium, Fluorescent, or Low Pressure Sodium.
 - Exterior lighting shall be fully shielded. “Fully Shielded” denotes lighting fixtures which are shielded, focused, or constructed so that light rays do not project horizontally or vertically.

Highway and Street System Goals, Policies, and Implementation Measures

- Provide a street and highway system which is aesthetically pleasant to the user through the incorporation of setbacks landscape buffers on applicable medians and rights-of-way.

Kern County Zoning Ordinance

Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination and/or glare can create a glow that may obscure the night sky and could 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.

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

Methodology

The proposed project's potential impacts on aesthetics have been evaluated using both quantitative and qualitative methods. This visual impact assessment is being utilized to identify and assess potential long-term adverse visual impacts on aesthetics and visual resources that might result from construction and/or operation of the project. This assessment generally follows visual assessment practices used by the Federal Highway Administration (FHWA 2015), the Bureau of Land Management (BLM 1986), the US Forest Service (USFS 1995), and other federal regulatory agencies. The visual inventory and impact assessment included the steps listed below. Additional details regarding the methods are provided in the following sections.

- Defining the project and its visual setting by assessing the project proponent's submitted project application materials, including plans and descriptions, and reviewing Google Earth Pro aerial photographs and street-level photography, Kern County geographic information system (GIS) topographic and land use data, and US Geological Survey (USGS) topographic data.
- Identifying sensitive receptors and potential KOPs through evaluation of visual quality and expected viewer response.
- Conducting a field survey of the project site and vicinity to take photographs of the project site, document existing visual conditions, and identify the locations and characteristics of viewer groups in the project area.
- Selecting KOPs that are the most representative and important VPs identified during the field survey to evaluate potential visual impacts that would result from the project.
- Preparing visual simulations that depict photorealistic renderings of conditions following construction and the installation of proposed project features, as seen from the designated KOPs.
- Completing a qualitative evaluation of visual change that would result from the project and impacts on scenic quality using the visual simulations.
- Qualitatively evaluating how viewer groups in the project area may be affected by the project.
- Identifying methods to mitigate any significant visual impacts.

The evaluation of project impacts is based on professional judgment, analysis of the Kern County General Plan goals and policies related to visual resources, and the significance criteria established by CEQA *Guidelines*, Appendix G. More detailed information on the methodology behind the selection of KOPs and rating visual quality is provided below.

Field Surveys

A field survey was conducted to inventory existing visual conditions of the project site and its surroundings in August 2019. Photographs were taken to document representative viewing locations where the project may be seen and for use as the base images for visual simulations. Photographs used for visual simulations were produced using a 35-millimeter, 53-megapixel, full-frame, single lens reflex camera equipped with a 50-millimeter fixed focal length lens. This configuration is the industry-accepted standard for approximating the field of vision in a static view of the human eye. The camera positioning was determined

with a sub-meter, differentially corrected Global Positioning System (GPS). The camera was positioned at eye-level for each photograph.

Viewpoints and Key Observation Points

A total of nine VPs were identified following the field surveys that provide representative views of the greater project area and the proposed solar energy facilities from varying public viewing areas, distances, and perspectives.

Table 4.1-1, *Summary of Viewpoints and Key Observation Points*, provides information on each VP location, including the view direction, distance to the closest project features, and viewer groups. Figure 4.1-2, *Viewpoints and Key Observation Points*, identifies the viewpoint locations. Photographs showing the general landscape character in the project area and the existing visual conditions at each VP are shown in Figure 4.1-3, *Photographs of Existing Visual Conditions at Viewpoints*.

VPs 1 and 2 are positioned on roadways north of California City limits, in areas where the proposed solar project would be most visible to the public at a close range; VP 3 is taken from the municipal airport in California City; and VPs 4 and 5 are located along SR-14 in areas where the proposed solar field would be most noticeable.

VPs 1 through 5 were selected as KOPs to be the focus of visual simulations and detailed impact analysis. These five KOPs were determined to be the most important and representative of visual conditions and viewer locations. They are focused on high traffic public areas where the solar field would be the most visible from the surrounding area, consistent with Kern County practices for analyzing visual effects of proposed solar projects. The remaining VPs 6 through 9 are not the focus of visual simulations and detailed impact analysis. With project implementation, visual conditions at these VPs would be similar to those at the selected KOPs. The selected KOPs are identified in Figure 4.1-2, *Viewpoints and Key Observation Points*, and Table 4.1-1, *Summary of Viewpoints and Key Observation Points*; the table also includes a brief explanation on the rationale for selecting the KOPs.

Table 4.1-1. Summary of Viewpoints and Key Observation Points

VP ^a	Location	View Direction	Distance ^b	Viewer Groups	Selected as KOP? (Rationale)
1	Phillips Rd at Cheyenne Blvd	W	1,200 feet to panels	<ul style="list-style-type: none"> Local Motorists Residents 	Yes (location offers close-range views of the proposed solar field adjacent to roadway and from closest residents)
2	Neuralia Rd north of Phillips Rd	N-NE	1,600 feet to panels	<ul style="list-style-type: none"> Local Motorists 	Yes (location offers close-range views of the proposed solar field adjacent to roadway)
3	California City Municipal Airport	NE	3,000 feet	<ul style="list-style-type: none"> Residents Regional Travelers 	Yes (location offers views of the proposed solar field seen from a regional hub)
4	Northbound SR-14 north of Phillips Rd	SE	6,000 feet	<ul style="list-style-type: none"> Regional Motorists 	Yes (location offers example of the proposed solar field from SR-14)

Table 4.1 1. Summary of Viewpoints and Key Observation Points, continued

VP ^a	Location	View Direction	Distance ^b	Viewer Groups	Selected as KOP? (Rationale)
5	Northbound SR-14 south of Phillips Rd	E-NE	7,000 feet	<ul style="list-style-type: none"> Regional Motorists 	Yes (location offers example of the proposed solar field from SR-14 within California City limits)
6	BLM Jawbone Station Visitors Center along SR-14	S	5 miles	<ul style="list-style-type: none"> Recreation Area Users Regional Motorists 	No (separated from proposed solar field area)
7	Adjacent to northbound SR-14 near Beacon Solar Project	NE	Not applicable	<ul style="list-style-type: none"> Regional Motorists 	No (view not directed toward project)
8	Neuralia Road near Municipal Airport	NE	1,500 feet	<ul style="list-style-type: none"> Local Motorists 	No (similar to KOP 2)
9	California City High School	N	1.5 miles	<ul style="list-style-type: none"> Residents 	No (separated from proposed solar field area)
Notes:					
^a Bold indicates VPs selected as KOPs.					
^b Distance refers to the approximate distance to the nearest project feature (proposed or alternate) in the specified view direction.					

Visual Simulations

Visual simulations were created for the five KOPs to show post-development visual conditions that would result from the proposed project. The visual simulations were created using computer-aided 3D modeling and rendering techniques to create a photorealistic representation of the approximate locations and scale of the proposed project facilities and their visual characteristics (e.g., surface color and texture). The simulated features presented in the visual simulations are based on assumptions from information provided in the project description, preliminary design drawings, and similar photovoltaic (PV) plant projects in the region. Key assumptions are as follows:

- Proposed PV panel modules on single-axis tracking system are shown in a grid pattern.
- Typical PV solar panels are expected to remain between 6 and 8 feet in height as measured from the ground surface to the panel surface when in a flat position and parallel to the ground during mid-day periods. When 8-foot solar panels are tilted at their greatest angles during sunrise and sunset periods, they would be approximately 10 feet tall at the highest point. The simulations depict the most likely scenario of 8-foot solar panels with one side tilted and reaching a height of approximately 10 feet aboveground. The impact analysis below generally refers to these as 10-foot solar panels.
- Perimeter fencing is shown as approximately 7-foot-tall chain link fencing with 1-foot of barbed wire on top.
- The project proponent has included a proposed option for installing a light-colored, palliative ground cover within the solar field in the event that bifacial solar panels are used for the project. The use of the palliative ground cover would increase the albedo of the ground and solar energy

production. To account for the potential use of a light-colored palliative, a second version of visual simulations are included that demonstrate increased color contrast within the solar field area.

Photographs showing the existing visual conditions and the visual simulations showing project conditions are provided with the discussion for Impact 4.1-3.

Scenic Quality Rating

Scenic quality refers to the visual appeal of a landscape relative to desired scenic values and the abundance or scarcity of similar qualities in the region. Scenic quality can be measured quantitatively by evaluating the presence or absence of scenic features and the intrusion of features that detract from the scenic features. Several different methods may be used to rate scenic quality. Scenic quality rating for the project was conducted for the KOPs following the general principles and scenic quality rating criteria described in BLM Manual H-8410-1, Visual Resource Inventory (1986). According to this method, visual quality is rated according to the presence and characteristics of seven criteria: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Each criterion is described below. The numeric rating system is described in Table 4.1-2, *Scenic Quality Rating System*.

1. The **landform** component takes into account the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental (as found in Yosemite Valley) or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).
2. The **vegetation** component 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 recognizes that visual quality is largely tied to the presence of water in scenery, as it is that ingredient that adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.
4. The **color** component considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation). Key factors used when rating the color of scenery are variety, contrast, and harmony.
5. The **adjacent scenery** component takes into account the degree to which scenery outside the view being rated enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to 5 miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor is generally applied to views that would normally rate very low in score, but the influence of the adjacent high visual quality would enhance the visual quality and raise the score.
6. The **scarcity** component 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 key factor 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.

- The ***cultural modifications*** component takes into account any man-made modifications to the landform, water, and/or vegetation, and/or the addition of man-made structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion or they may complement and improve the scenic quality of a view.

Table 4.1-2. Scenic Quality Rating System

Key Factors	Rating Criteria and Score ^a		
Landform	High vertical relief (prominent cliffs, spires, or massive rock outcrops); severe surface variation; highly eroded formations (major badlands or dune systems); detail features dominant and exceptionally striking/intriguing. If true, score = 5	Steep canyons, mesas, buttes, cinder cones, and drumlins; interesting erosional patterns or variety in size and shape of landforms; or detail features, which are interesting though not dominant or exceptional. If true, score = 3	Low rolling hills, foothills, or flat valley bottoms or few or no interesting landscape features. If true, score = 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. If true, score = 5	Some variety of vegetation but only one or two major types. If true, score = 3	Little or no variety or contrast in vegetation. If true, score = 1
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. If true, score = 5	Flowing, or still, but not dominant in the landscape. If true, score = 3	Absent or present but not noticeable. If true, score = 0
Color	Rich color combinations; variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snow fields. If true, score = 5	Some intensity or variety in colors and contrast of the soil, rock, and vegetation but not a dominant scenic element. If true, score = 3	Subtle color variations, contrast, or interest; generally muted tones. If true, score = 1
Influence of Adjacent Scenery	Adjacent scenery greatly enhances scenic quality. If true, score = 5	Adjacent scenery moderately enhances overall scenic quality. If true, score = 3	Adjacent scenery has little or no influence on overall scenic quality. If true, score = 0
Scarcity	One of a kind, unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. If true, score = 5+^b	Distinctive, though somewhat similar to others within the region. If true, score = 3	Interesting within its setting but fairly common within the region. If true, score = 1
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. If true, score = 2	Modifications add little or no visual variety to the area and introduce no discordant elements. If true, score = 0	Modifications add variety but are very discordant and promote strong disharmony. If true, score = -4
<p>Notes: ^a Values for each rating criteria are maximum and minimum scores only. It is also possible to assign scores within these ranges. Fractional values can be assigned, if necessary, to distinguish between qualities. ^b A score greater than 5 can be assigned to scarcity but must be supported by written justification.</p>			

Source: BLM 1986

Generally, the highest scenic quality ratings in all seven categories could reach a total score of 32, based on the scoring system described in the table above. Landscape views with a total score of 19 or more are considered to have high or very high visual quality (“Class A”). Landscape views with a total score of 12 to 18 are considered to have moderate visual quality (“Class B”). Landscape views with a total score of 11 or less are considered to have low visual quality (“Class C”).

The degree of visual change and impacts on scenic quality that would result from the project can be measured by subtracting the score for the project conditions from the score for existing conditions. The difference in the scenic quality scores represents the degree of visual change and impacts on existing scenic quality. Lower values indicate greater impacts, while values near zero indicate little to no impact. A summary of scenic quality ratings at the KOPs for existing conditions and proposed project conditions based on the visual simulations, as well as the score differences, are provided in Table 4.1-3, *Scenic Quality Ratings*.

Table 4.1-3. Scenic Quality Ratings

KOP	Rated Conditions	Visual Quality Ratings								Visual Quality Change ^{a, b}	Explanation
		Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modifications	Total Score		
1	Existing	1.5	2	0	2	3.5	1.5	-1.5	9	-3	Project area is relatively flat with no water features. Some vegetation removed but variety remains surrounding the project, which introduces significant degree of built features into an area with a moderate to high level of existing cultural modifications. Some blocking of the distant scenic landforms that are somewhat common in the region.
	Proposed	1.5	1	0	1.5	3	1.5	-2.5	6		
2	Existing	1	2	0	1.5	2	1	-0.5	7	-2.5	Project area is relatively flat with no water features. Existing scenic features are somewhat common in region. Project would result in some distant vegetation removal and substantial increase in cultural modifications in an area with few cultural modifications are visible in the existing landscape. Vegetation in immediate foreground and views toward distant landforms remain intact.
	Proposed	1	1.5	0	1	2	1	-2	4.5		
3	Existing	1	1.5	0	1	2	1	-3	3.5	-1	Project area is flat with no water features. Existing scenic features are relatively common in region and somewhat diminished by a high degree of ground-level development, and distance to project reduces the appearance of vegetation removal and increases cultural modifications. Views toward distant landforms would remain intact.
	Proposed	1	1	0	1	2	1	-3.5	2.5		

Table 4.1-3. Scenic Quality Ratings, continued

KOP	Rated Conditions	Visual Quality Ratings								Visual Quality Change ^{a, b}	Explanation
		Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modifications	Total Score		
4	Existing	1	2	0	2	1	1	-0.5	6.5	-0.5	Project area is flat with no water features. Existing scenic features are common in region. Project would result in distant vegetation removal and additional cultural modifications that are barely visible and not noticeable due to distance and viewing angle.
	Proposed	1	2	0	2	1	1	-1	6		
5	Existing	1.5	2	0	2	2	1	-1	7.5	-1	Project area is relatively flat with no water features. Existing scenic features are somewhat common in region. Project would result in distant but barely noticeable vegetation removal and cultural modifications; however, distinct, foreground vegetation remains intact. Views toward distant landforms would remain intact.
	Proposed	1.5	2	0	1.5	2	1	-1.5	6.5		

Notes:
^a Scenic Quality Change = Total Score for Existing Conditions – Total Score for Proposed Conditions.
^b Negative value (-) indicates a reduction in visual quality.

Glare Analysis

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 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 PV solar 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 PV solar panel so that it may absorb solar radiation and convert it to electricity. PV solar panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern PV solar panels reflect as little as 2 percent of incoming sunlight, which is similar to water and less than soil and wood shingles. Some of the concern and misconception are likely due to the confusion between PV solar systems and concentrated solar power (CSP) systems. CSP systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator (Palmer and Laurent 2014). The effect of glare from PV solar panels can be compared to water-covered surfaces or a glass-faced building that has been treated with an anti-reflective coating, whereas glare from CSP systems has the potential to be substantially greater. Regardless of the misconception that PV solar panels inherently cause too much glare, a large PV solar plant has the potential to create a new source of substantial glare and the potential for glare-related impacts on receptors must be analyzed pursuant to CEQA.

A glare analysis report was prepared to analyze and identify potential glare-related impacts that would result from the proposed project (Dudek 2021). The study was conducted using methods recommended by the Federal Aviation Administration (FAA) described in the *Technical Guidance for Evaluating Selected Solar Technologies on Airports* (FAA 2018). Glare conditions were modeled using the Solar Glare Hazard Analysis Tool (SGHAT), which is a 3D geometric glare analysis software developed by Sandia National Laboratories. SGHAT is publicly licensed as ForgeSolar. SGHAT and ForgeSolar allow for the evaluation of a particular PV array to produce glare intensity, predicting when and where glare would occur from a proposed PV array at discrete observation points or routes.

Because of the project’s close proximity to the California City Municipal Airport, and the existence of multiple highways in the immediate vicinity of the project site, a 5-mile-radius study area was determined to be necessary for this analysis.

Dudek performed a visibility analysis on the surrounding terrain within the study area to determine where the project is most visible. Based on this analysis, Dudek determined the location of potential receptors within the study area. All runway approach paths and air traffic control towers associated with the California City Municipal Airport were included in this analysis regardless of visibility or distance. A geometric glare analysis was then conducted for the identified potential receptors to determine a worst-case scenario of where and when glare might be encountered. Upon completion of the geometric analysis, Dudek reviewed the results for potential glare hazards. To account for the large project area and to increase the reliability of the modeling results, the project site was broken up into 17 separate analysis groups, which were further broken into panel sections averaging about 20 acres in size. A full visibility and glare analysis were performed on each analysis group.

Glare analysis for the project involved modeling total glare that would be reflected from individual PV solar array blocks within each project site, and the intensity and duration of glare that would be directed toward receptors in the project vicinity. By inputting the solar panel locations and characteristics, as well as the locations and elevations of the receptors, the software was able to simulate the sun's progression across the sky over the course of a year and model the potential glare caused by the proposed solar arrays. Glare receptors include both stationary observation points and linear routes where vehicle or air traffic may be affected by high levels of glare. Modeled receptor groups included airport flight paths, air traffic control towers, observation points from homes, and ground transportation routes (e.g., roads, highways, and railroads).

Glare intensity is described according to potential for after-image and is based on the FAA's Solar Glare Ocular Hazard Plot, which includes the following color-based categories (Dudek 2021):

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

The glare analysis report is provided in Appendix B-2, *Glare Study*, of this EIR. The results of the glare analysis are discussed under Impact 4.1-4.

Thresholds of Significance

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

- a) Have a substantial adverse effect on 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 non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage 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 that would adversely affect day or nighttime views in the area.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to aesthetics, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such

impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

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

Scenic vistas are typically expansive views from elevated areas. They may or may not be part of a designated scenic overlook or other area providing a view of a landscape. There are no designated or widely recognized scenic vistas in the project vicinity. The project site and the surrounding area are within a flat valley and away from elevated views of the project site.

The project site may be visible to some degree from distant elevated views, such as from the mountain peaks and southeast facing slopes of the Sierra Nevada Range to the west and northwest (refer to Figure 4.1-1, *Project Site Viewshed within 10 Miles*). The PCT passes through the Sierra Nevada in this area approximately 10 miles west of the project site in the vicinity of Red Mountain, Cache Peak, and Middle Knob. Approximately 3 to 4 miles of the PCT on the southeast-facing slopes of the southern Sierra Nevada are within or adjacent to the viewshed modeled for the project, which indicates the project site may be intermittently visible from the trail to some degree, depending on intervening topography and vegetation, viewing angle, and atmospheric conditions. This segment of the trail ranges in elevation from approximately 4,200 to 6,000 feet above mean sea level. In contrast, the project site ranges in elevation from approximately 2,100 to 2,400 feet above mean sea level. Furthermore, seasonal haze in the region limits the period when distant views of more than a few miles may be available.

The project would involve the installation of solar panels within an approximately 1,955-acre site that is generally undeveloped. The contrast of solar panels and surrounding landscape may be visible within the viewshed of distant mountain peaks and a small portion of the PCT. The project would result in significant new development in the regional viewshed. However, it would occur in the vicinity of limited existing commercial and residential development within and north of California City, as well as existing solar development. Where the project may be visible from distant elevated areas of the Sierra Nevada Range, significant impacts to those views would not occur due to the separation distances, narrow viewing angles, and intervening landscape features. Although the project may be intermittently visible, the project would not draw attention from the casual observer or significantly affect viewer experience. The focus of the casual observer would be on landscape features within the foreground-middleground (0 to 5 miles), the expansive Mojave Desert, and the distant mountain range horizon. The project would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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.

There are no designated State scenic highways in Kern County. The segment of SR-14 between Highway 395 and SR-58 which is within 1 mile west of the project site, is an eligible State scenic highway; however, this highway has not been formally designated as such. Official designation of a State scenic highway occurs through a process in which the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a state scenic highway by the Caltrans director (Caltrans 2019).

The project would involve the removal of existing vegetation that contributes to scenic quality and the natural desert landscape along the SR-14 visual corridor. The proposed solar facilities and supporting facilities (i.e., substations, overhead powerlines, and other supporting infrastructure) would be installed in the generally undeveloped project sites at least 0.5 miles from the highway or greater, replacing the various desert vegetation communities (refer to Section 4.4, *Biological Resources*, for details) and sparsely scattered Joshua trees that may be visible to some degree along the highway corridor. In addition to vegetation removal, the proposed solar facilities would be visible where closest to the highway; however, the visibility of these features would not result in significant visual impacts or substantially degrade the (eligible) scenic highway experience of motorists due to the separation distance and relatively flat project site. Impacts of the project's solar facilities on state scenic highways would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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, the project would conflict with applicable zoning and other regulations governing scenic quality.

Construction

Project construction would involve clearing vegetation and ground disturbance (i.e., grading and trenching) within the 1,955-acre project site and along the gen-tie line corridor, and the installation of solar energy facilities and other supporting infrastructure. In addition, construction activities would involve the use of heavy equipment, vehicle traffic, stockpiled materials and wastes, and dust generation. The visibility of construction disturbances and activities in contrast to the surrounding natural and undeveloped landscape would temporarily degrade the existing visual character and quality of public views in the project area. Prior to the installation of solar panels, construction would be visible and may draw attention from viewers for up to approximately 1 or 2 miles from viewing locations, most notably along local roadways (refer to KOPs 1 and 2). Beyond 1 or 2 miles, construction activities may be visible to some degree but would not be noticeable. The same areas affected by temporary construction impacts would also be affected by long-term effects of the proposed solar facilities, which would be more visible and result in greater visual effects than the construction elements. Therefore, the impact discussion is focused on post-construction conditions during operation of the project. Short-term construction activities of the proposed project would not substantially degrade the existing visual character or scenic quality of public views of the project sites and their surroundings. Impacts would be less than significant.

Operation

Figure 4.1-4a, *KOP 1 – Photograph of Existing Visual Conditions*, through Figure 4.1-8b, *KOP 5 – Visual Simulation of the Proposed Project*, are shown below, where “a” identifies existing and “b” identifies visual simulation of the proposed project. No simulations are included showing palliative ground cover; therefore, the use of palliatives and the anticipated visual effect is discussed qualitatively in the impact discussion for applicable KOPs where the ground beneath the solar facilities may be visible.



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-4a. KOP 1 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-4b. KOP 1 – Visual Simulation of the Proposed Project



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-5a. KOP 2 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-5b. KOP 2 – Visual Simulation of the Proposed Project



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-6a. KOP 3 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-6b. KOP 3 – Visual Simulation of the Proposed Project



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-7a. KOP 4 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-7b. KOP 4 – Visual Simulation of the Proposed Project



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-8a. KOP 5 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-8b. KOP 5 – Visual Simulation of the Proposed Project

KOP 1 – Phillips Road at Cheyenne Boulevard

Existing Visual Conditions

The existing view from KOP 1 is provided in Figure 4.1-4a, *KOP 1 – Photograph of Existing Visual Conditions*. KOP 1 is located along Phillips Road near the intersection of Cheyenne Boulevard, in unincorporated Kern County, north of California City limits. The selected view direction is west, toward a western portion of the project area. This viewpoint provides a close-range viewing perspective of the project site and represents the views of both nearby residents and motorists driving along Phillips Road toward SR-14. The view from KOP 1 is characterized by valley vegetation on either side of the road and by the sloping foothills that give way to the scenic backdrop of the southern Sierra Nevada Range. An existing solar development (Barren Ridge) is visible and somewhat prominently against the mountain backdrop, just beyond the point where Phillips Road intersects the highway, in the middleground of the view. In the foreground, the flat, open, and vegetated valley floor of project site is visible on the left side of the road. The vegetation is predominantly composed of sparse scatterings of creosote bushes and sagebrush. Other development includes an existing transmission line that is located in the foothills and runs roughly parallel to SR-14. The scenic quality rating for this area is considered low.

Residents and local motorists in this area have views that are generally frequent and longer in duration and they are more accustomed to the existing visual conditions and details of the landscape. For these reasons, residents and local motorists in this area are expected to have high sensitivity.

Visual Conditions with the Proposed Project

The post-development visual simulation for KOP 1 is provided in Figure 4.1-4b, *KOP 1 – Visual Simulation of the Proposed Project*. The project would be highly visible from this location. Solar panel arrays, enclosed by a perimeter fence, would be visible at a close range from the roadway. The visual simulation depicts the solar panels as a bluish gray as they would likely appear at close range, during full sunlight conditions. The smooth grid pattern of solar panel arrays would replace the scenic colors and textures of natural desert vegetation. The existing adjacent scenery of the Sierra Nevada Range would remain visible to the west, although lower portions of the sloping foothills would be blocked by the solar development. The project would introduce a substantial cultural modification to an area of the valley that is primarily undeveloped; however, the overall change seen from KOP 1 would appear similar to the existing solar development located at the foothills of the mountains. The effects of the project's visual changes would increase as viewers come closer to the solar arrays installed immediately adjacent to the roadway. The project would reduce overall visual quality at KOP 1 by a moderate amount for the vegetation, color, and cultural modifications rating criteria. The introduction of additional solar arrays would draw attention and become a dominant feature in the landscape; however, some views of vegetation and natural colors around the project and views of adjacent scenery would remain.

Depending on final engineering and design, additional project facilities may be visible from KOP 1 that are not shown in the visual simulation, including on-site substations, overhead collector lines, energy storage system buildings, and other supporting infrastructure such as water storage tanks. If larger and taller facilities like the on-site substations or energy storage buildings were positioned close to the roadway, they would block views of adjacent scenery to a greater degree and draw a greater amount of viewer attention than the lower flat solar panels. Impacts from large supporting infrastructure positioned close to the roadway could be greater than the visual impacts of the solar panels alone. Additionally, palliative material

may be installed within the project site. The lighter color of the palliative material would highlight the presence of the solar panels and would contrast with the natural colors of the valley floor to a greater degree than would the exposed native soil involved with surface grading alone. However, application of the palliative (or similar light-colored gravel) would result in similar visual contrast to the simulation presented for KOP 1 due to the presence of surrounding vegetation.

The mitigation to reduce visual impacts is discussed at the end of the discussion for Impact 4.1-3.

KOP 2 – Neuralia Road north of Phillips Road

Existing Visual Conditions

The existing view from KOP 2 is provided in Figure 4.1-5a, *KOP 2 – Photograph of Existing Conditions*. KOP 2 is located along Neuralia Road, near Phillips Road, approximately 3 miles north of the California City Municipal Airport and 1.2 miles north of the city limits. The selected view provides a slightly elevated perspective looking to the north-northeast toward the project site and approximates the intermittent views that may be experienced by motorists driving north on Neuralia Road toward Rancho Seco. The Rand Mountains that border the Fremont Valley, to the northeast, fill the background of this view. The gently sloping valley floor is visually characterized by desert scrub vegetation consisting mostly of creosote bushes. The low-profile vegetation and terrain appear consistently throughout the foreground and middleground of this view and therefore limit the degree of visual interest from this vantage point. The backdrop of distant desert hills is somewhat scenic and common to this part of the Mojave Desert. The scenic quality rating for this area is considered low.

Travelers along this roadway travel at speeds below those on the roughly parallel SR-14 corridor and, therefore, have views that are longer in duration. Additionally, they are generally more accustomed to the existing visual conditions and details of the landscape. For these reasons, local motorists in this area are expected to have a moderate to high visual sensitivity.

Visual Conditions with the Proposed Project

The post-development visual simulation for KOP 2 is provided in Figure 4.1-5b, *KOP 2 – Visual Simulation of the Proposed Project*. In this view, the backdrop of undulating hills would remain visible, while a portion of the desert landscape in the middleground would be replaced with the geometric form of solar panels, effectively creating a band of grayish blue between the visible valley floor and base of the distant mountains. The project would introduce new cultural modifications to an area of the valley that is primarily undeveloped. The introduction of solar arrays would draw attention from motorists and residents and would moderately degrade the existing visual character of the natural desert landscape.

Depending on final engineering and design, additional project facilities may be visible from KOP 2 that are not shown in the visual simulation, including on-site substations, overhead collector lines, energy storage system buildings, and other supporting infrastructure. When viewed at the distances shown in Figure 4.1-5b, *KOP 2 – Visual Simulation of the Proposed Project*, these additional project features may be visible but would likely not result in substantially greater visual impacts than the solar panels alone.

Mitigation to reduce visual impacts is discussed at the end of the discussion for Impact 4.1-3.

KOP 3 – California City Municipal Airport

Existing Visual Conditions

The existing view from KOP 3 is provided in Figure 4.1-6a, *KOP 3 – Photograph of Existing Visual Conditions*. KOP 3 is located at the California City Municipal Airport; the selected view direction is facing northeast, and toward the southernmost project parcel, approximately 0.5 miles away. This view represents those of regional travelers and other users of the airport, and also approximates views experienced by a cluster of residents about 1 mile south of the airport.

Because of the way that the airport is designed, most activity takes place in the built structures south of the runways; some of this infrastructure is visible in the foreground at the right of the viewpoint photo. Because of this, most views toward the north include large swaths of asphalt in the foreground, similar to that seen in the existing view. Beyond the tarmac, sparse desert vegetation with little variation in size and color is visible into the middle distance, eventually giving way to low desert foothills and the Rand Mountains in the background. The scenic quality rating for this view is considered low because of the lack of variety of vegetation, the scenic features common to most of the surrounding area and, especially, the high degree of cultural modifications.

Users of the airport, as well as local motorists and the limited number of residents in the area, have views that tend to be longer in duration, and they may be more accustomed to the existing visual conditions and details of the landscape. For these reasons, viewers in this area are expected to have moderate to high sensitivity.

Visual Conditions with the Proposed Project

The post-development visual simulation for KOP 3 is provided in Figure 4.1-6b, *KOP 3 – Visual Simulation of the Proposed Project*. From this location, project solar panel arrays would be visible at a distance of approximately 0.5 miles, seen against the base of the foothills on the right. These solar panels would appear a light gray or blue to dark gray or blue, depending on the time of day and light conditions. The majority of the visible valley floor and vegetation in the foreground to middleground would remain visible, as would the existing adjacent scenery of the hills and distant Rand Mountains. The project would introduce new cultural modifications to an area of the valley with some obvious existing development. The project would reduce overall visual quality at KOP 3 by a low amount for the vegetation and cultural modifications rating criteria.

Depending on final engineering and design, additional project facilities may be visible from KOP 3 that are not shown in the visual simulation, including on-site substations, overhead collector lines, energy storage system buildings, and other supporting infrastructure. These additional project features would be visible but would not significantly alter the character of the solar facility and, when viewed from this distance, would not block views toward the surrounding landscape features. Palliative material (or similar light-colored gravel), if installed within the project site, would generally be indiscernible from this location.

Mitigation to reduce visual impacts is discussed at the end of the discussion for Impact 4.1-3.

KOP 4 – Northbound SR-14 north of Phillips Road

Existing Visual Conditions

The existing view from KOP 4 is provided in Figure 4.1-7a, *KOP4 – Photograph of Existing Visual Conditions*. KOP 4 is located along SR-14 approximately 1.8 miles north of Phillips Road. The photograph is taken from east of the northbound lanes of traffic. The southeast view direction approximates views experienced by motorists traveling southbound toward Mojave. This selected viewpoint provides a slightly elevated view toward the northernmost project parcels. The view includes an expanse of desert valley floor with low-growing desert scrub vegetation typical of this portion of the Fremont Valley. The tracks of a railroad line are visible as a lighter colored lineal break in the vegetation, in the middleground distance zone. A residential area north of Phillips Road is recognizable by an area of tall, dark-green vegetation, seen against the distant form of Castle Butte. The distant mountain, together with other distinct landforms beyond California City near the center of the photo, provides visual interest to the otherwise limited variety of texture on the valley floor. The visual quality rating for this area is considered low because it is common to views within the Fremont Valley.

Many regional and local motorists view this area for a few minutes as they pass through the area along the SR-14 corridor. Motorists traveling on this section of SR-14 are expected to have a moderate sensitivity to visual change due to the high rate of speed, and the limited visibility of existing development.

Visual Conditions with the Proposed Project

The post-development visual simulation for KOP 4 is provided in Figure 4.1-7b, *KOP4 – Visual Simulation of the Proposed Project*. At the distance of over a mile, the project would be partially visible from this portion of the highway but would not appear dominant in views experienced by motorists traveling south on SR-14. In this view, the solar arrays would be seen as a thin linear form near the horizon, and would appear as light gray or blue to dark gray or blue depending on the time of day and light conditions. The panels have been shown as light gray, as they would in full daylight conditions. The project would not block views toward distant landforms and much of the visible valley floor and vegetation in the foreground to middleground would remain visible. The project would introduce new cultural modifications, which at distances and viewing angles similar to KOP 4 would not be particularly prominent. The project would reduce overall visual quality at KOP 4 by a low amount for the cultural modifications rating criteria.

Depending on final engineering and design, additional project facilities may be visible from KOP 4 that are not shown in the visual simulation, including on-site substations, overhead collector lines, energy storage system buildings, and other supporting infrastructure. These additional project features would be visible but would not significantly alter the character of the solar facility and, when viewed from this distance, would not block views toward the surrounding landscape features. Palliative material (or similar light-colored gravel), if installed within the project site, would generally be indiscernible from KOP 4.

Mitigation to reduce visual impacts is included at the end of the discussion for Impact 4.1-3.

KOP 5 – Northbound SR-14 south of Phillips Road

Existing Visual Conditions

The existing view from KOP 5 is provided in Figure 4.1-8a, *KOP 5 – Photograph of Existing Visual Conditions*. KOP 5 is an elevated highway view from southbound SR-14 and is taken looking east-northeast

toward the westernmost portions of the project and those parcels that would be most visible from SR-14. The selected view is taken from a location near the extension of Washburn Avenue, approximately 1.5 miles south of Phillips Road and 1.4 miles west from the nearest portion of the proposed project. The view is representative of those experienced by regional motorists traveling north on SR-14. The view from KOP 5 is somewhat common for the SR-14 highway corridor, in which the flat desert valley floor is bordered by low hills. Beyond the highway corridor, the valley is mostly undeveloped and covered with desert scrub vegetation mostly consisting of low desert scrub. A few Joshua trees provide visual interest in the foreground, in this portion of the project area, but become indistinguishable in the middleground. Some development can be discerned on the left in the form of dark green vegetation that exists in the small residential area north of Phillips Avenue. The Rand Mountains form the backdrop and delineate the edge of the valley floor. From this portion of the highway, natural landscape features define the dominant visual character of the area. The visual quality of the view from KOP 5 is moderate.

As with KOP 4, many motorists will have views comparable to that shown in KOP 5 for a few minutes as they pass through the area along the SR-14 corridor. Motorists traveling on this section of SR-14 are expected to have low to moderate sensitivity to visual change due to the high rate of speed.

Visual Conditions with the Proposed Project

The post-development visual simulation for KOP 5 is provided in Figure 4.1-8b, *KOP 5 – Visual Simulation of the Proposed Project*. The project would be visible to motorists traveling northbound on SR-14; however, from this distance and viewing angle, it would not be particularly noticeable. A narrow band of solar panel arrays would replace a view of existing vegetation, and would be seen on the left, at the base of the distant hills. The panels are shown as light gray in the simulation; however, depending on time of day and lighting conditions, they could be light gray to a darker blue. The project would introduce new cultural modifications to an area with a limited amount of existing development; however, the visible valley floor and vegetation in the foreground to middleground would remain intact, as well as the existing scenery of the hills and distant Rand Mountains in the background. The project would reduce overall visual quality at KOP 5 by a low amount for the color and cultural modifications rating criteria.

Depending on final engineering and design, additional project facilities may be visible from KOP 5 that are not shown in the visual simulation, including on-site substations, overhead collector lines, energy storage system buildings, and other supporting infrastructure. The poles of collector lines would periodically interrupt views of adjacent scenery to some degree but would not block views. If larger and taller facilities like the on-site substations or energy storage buildings were positioned close to the highway corridor, they could block views of adjacent scenery to a greater degree and draw a greater amount of viewer attention than the lower flat solar panels. Impacts from large supporting infrastructure positioned close to the highway corridor could be greater than the solar panels alone. Palliative material (or similar light-colored gravel), if installed within the project site, would be generally indiscernible from KOP 5.

Mitigation to reduce visual impacts is discussed at the end of the discussion for Impact 4.1-3.

Conclusion Summary

The project is in portions of unincorporated Kern County and California City. Existing development in this portion of the Mojave Desert is generally limited to SR-14, the California City Municipal Airport, sparse residential development, and a limited number of local roads. The project parcels are offset from SR-14 by distances of 0.75 miles or greater. The nearest residences to the project parcels are approximately 0.25 miles

away. Therefore, close-range, public views of the project would be primarily from local roadways and the public portions of the airport. Additionally, more distant views of the project would be available from SR-14. As shown in the views from KOP 1 and KOP 2, travelers on portions of local roadways would have close-range, unobstructed views of the solar arrays and other components of the proposed project. The solar panels would be a fairly dominant feature in the views and some natural features would become wholly or partially obscured from views along these roadways. Such impacts would increase further if large supporting infrastructure were positioned close to the roadway, such as on-site substations and energy storage facility buildings. Some nearby residents may have similar views to those shown in KOP 1 and KOP 2. The view from KOP 3 demonstrates that the solar arrays will be visible from the municipal airport; however, because the project borders the northern side of the airfield, most activity takes place at a distance of 2,000 feet or greater from the nearest parcel, and the project panels would not be as dominant a feature as in KOP 1 and KOP 2, especially given the presence of existing cultural modifications. As shown in KOP 4 and KOP 5, the project would be visible in open views from along SR-14. Views of similar solar facilities and infrastructure are common in the area (refer to Figure 4.1-2, *Viewpoints and Key Observation Points*) and some similar facilities can be seen in the views surrounding the project (KOP 1, VP 6, and VP 7). The project site and its immediate surroundings are absent of major development and the introduction of a 1,955-acre solar site to the area would substantially degrade existing visual quality and character of this desert landscape, which would be a significant impact.

The visual simulations and impact discussions for KOPs 1 through 5 do not include an analysis for the additional color contrast that would be introduced if a light-colored palliative ground cover (or similar gravel) is installed within the project site. As previously noted, an increase in color contrast would be visible beneath solar panels from the closest viewing locations (KOPs 1, 2, and 3); however, the overall visual impacts from addition of the palliative would not be substantially greater than the solar panels alone. The visual effects of color contrast could be reduced slightly if the palliative ground cover were not used and the natural ground cover beneath the solar panels was visible; however, the presence of the project features is the primary driver of the significant impact. Over time it is expected that any visible color contrast would be generally shielded by low vegetation, solar panels, or mitigation screening.

Mitigation Measures MM 4.1-1KC through MM 4.1-6KC and MM 4.1-1CC through MM 4.1-6CC would be incorporated to reduce visual impacts to the extent feasible, and include requirements to provide ongoing site maintenance including trash and debris removal; preserve and enhance scenic vegetation where possible; install visually screening features that would limit the visibility of project features; minimize color contrast through the selection of appropriate paint colors and surface treatments for project facilities; and limit impacts from the location of tall, intrusive project facilities near public viewing areas. To the greatest extent possible, the locations of the tallest project structures (substations, energy storage buildings, operations and maintenance [O&M] facilities, and other ancillary systems, etc.) would be positioned away from public areas to reduce their visual presence and intrusion. Because there are no feasible mitigation measures that can be implemented to maintain the existing open and predominantly undeveloped desert landscape character of the project site, the project would substantially degrade the existing visual character and scenic quality of public views of the site and its surroundings, as seen and described from the KOPs, and impacts on visual resources would remain significant and unavoidable.

Mitigation Measures

Kern County

MM 4.1-1KC: Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include but not be limited to the following:

- a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.
- b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.
- c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- d. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

MM 4.1-2KC: The project proponent 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 parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or 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 be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.

MM 4.1-3KC: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities, including operations and maintenance buildings, and array facilities, blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.

MM 4.1-4KC: Wherever possible, within the proposed project boundary, the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.

- a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) or allowed to revegetate with the existing native seed bank in the topsoil to reestablish vegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.
- b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used on-site; (2) a timeline for seeding the site; (3) the details of which areas are to be revegetated; (4) a list of the consultation efforts completed; (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations; and (6) a clear prohibition of the use of toxic rodenticides.
- c. During decommissioning and site restoration, ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish revegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. 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 revegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year period, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should efforts to revegetate with the existing native seed bank in the topsoil prove by the second year to not be successful, reevaluation 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 three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.

City of California City

MM 4.1-1CC: 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 City of California City Community Development Department. The program shall include but not be limited to the following:

- a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.
- b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the City of California City Community Development Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the City of California City Community Development 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 4.1-2CC: The project proponent shall install metal fence slats or similar view-screening materials, as approved by the City of California City Community Development Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, unless the adjacent property is owned by the project proponent (to be verified by the City of California City Community Development Department) or a public or private agency that has submitted correspondence to the City of California City Community Development Department requesting this requirement be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.

MM 4.1-3CC: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the City of California City Community Development Department, that will ensure all project facilities, including operations and maintenance buildings, and array facilities, blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.

MM 4.1-4CC: Wherever possible, within the proposed project boundary, the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. 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 City of California City Community Development Department for review and approval. The plan shall include the measures detailed below.

- a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to revegetate 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 do not require revegetation.
- b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used on-site; (2) a timeline for seeding the site; (3) the details of which areas are to be revegetated; (4) a list of the consultation efforts completed; (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations; and (6) a clear prohibition of the use of toxic rodenticides.
- c. During decommissioning and site restoration, ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish revegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the City of California City Community Development 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 revegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year period, an annual evaluation report shall be submitted to the City of California City Community Development Department for each of the three years. Should efforts to revegetate with the existing native seed bank in the topsoil prove by the second year to not be successful, reevaluation of revegetation methods shall be made in consultation with the City of California City Community Development Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.

Level of Significance after Mitigation

Kern County

Despite implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-4KC, impacts would remain significant and unavoidable.

City of California City

Despite implementation of Mitigation Measures MM 4.1-1CC through MM 4.1-4CC, impacts would remain significant and unavoidable.

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

Light**Construction**

The project is located within portions of unincorporated Kern County and California City. According to the County's Noise Ordinance, construction is allowed during the hours of 6:00 a.m. to 9:00 p.m. Monday through Friday, and 8:00 a.m. to 9:00 p.m. on weekends. California City's general construction noise allowance provides for work between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year and between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year. Project construction would generally occur during daytime hours so nighttime lighting would generally not be required; however, non-daylight hours may be necessary at times to make up for unanticipated schedule delays or to complete critical construction activities. If work during non-daylight hours is necessary, construction crews would use temporary lighting fixtures to illuminate work areas in order to perform the work safely. All lighting would be directed downward and shielded to focus illumination on the desired work areas only, and to prevent light spillage onto adjacent properties. During construction, dusk-to-dawn security lighting may also be required for the temporary construction staging area, parking area, construction office trailer entries, and project site access points. Per Mitigation Measures MM 4.1-5KC and MM 4.1-5CC, any nighttime construction would use lighting designed to provide the minimum illumination needed, thereby minimizing adverse impacts on the night sky and any receptors. Impacts from lighting during construction would be less than significant with mitigation.

Operation

During operations, the project would include security lighting and other lighting required for occupational health and safety. The project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions. Lighting would be installed at access gates, near the O&M building (co-located with the substation on the northern site), and at the proposed substations. No lighting is anticipated along most of the fence lines around the perimeter of the solar sites. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Additionally, lighting would be directed downward and shielded to focus illumination on the desired areas only and to minimize light trespass in accordance with applicable County requirements. Potential operational impacts associated with new sources of lighting at the solar sites would be minimized through compliance with the County's Chapter 19.81 Dark Skies Ordinance and California City's policies related to light associated with industrial developments. Mitigation Measures MM 4.1-5KC and MM 4.1-5CC would be implemented to ensure compliance with applicable standards for project lighting, which require the project lighting fixtures to be designed to provide the minimum illumination needed while reducing light impacts on the night sky and any receptors. Impacts from lighting during operation of the project would be less than significant with mitigation.

Glare

Construction

It is anticipated that the majority of proposed construction activities would occur during daylight hours. Increased truck traffic and the transport of the PV solar arrays and construction materials to the project site and transmission lines could temporarily increase glare conditions during construction from reflecting surfaces of equipment and materials. However, this increase in glare would be minimal and temporary. Construction activity would occur on focused areas of the project site as construction progresses and any potential sources of glare would not be stationary for prolonged periods of time. Additionally, the reflective surface area of construction equipment and materials would be minimal. Therefore, project construction would not create a new source of substantial glare that would affect daytime views in the area. Impacts would be less than significant.

Operation

As discussed in the methodology section above, an analysis of glare was conducted for the project and a report presenting the results of the analysis is provided in Appendix B-2 of this EIR (Dudek 2021). As described in the report, glare can result in visual hazards and temporary loss of vision. The hazard level of glare depends on the ocular impacts to the observer. The glare potential of the project's solar panels was modeled to determine the anticipated glare intensity using color-coded ocular impact categories: "Green" (low potential to cause an after-image); "Yellow" (potential to cause a temporary after-image); and "Red" (potential to cause retinal burn and permanent eye damage). The model analysis was based on project characteristics (i.e., single-axis tracking, smooth glass with anti-reflective coating, north-south orientation, 52-degree maximum and resting angle) and representative receptors identified in the project vicinity, which included airport flight paths, air traffic control towers, dwellings, roads and highways, and railroads. As discussed in the glare analysis report, the modeling results indicated the proposed project could result in glare in the "Green" and "Yellow" ocular impact categories to three of the receptors modeled. The identified receptors were limited to two locations on Neuralia Road and the flight approach path to Runway 24 at California City Municipal Airport. No other receptors in the model analysis received glare, and no glare in the "Red" category was identified. As detailed in Tables 3 and 4 of the glare analysis report (see Appendix B-2 of this EIR), some locations on Neuralia Road could experience glare in the "Yellow" ocular impact category for up to nearly one hour per day in the early morning and late afternoon of the winter months. Additionally, glare in the less severe "Green" ocular impact category is likely to be experienced at one of the two modeled locations for up to only five minutes in the late morning hours of the late fall through early spring months. Table 5 of the glare analysis report (see Appendix B-2 of this EIR) details the predicted glare for the approach path for Runway 24. It is predicted that this location will experience glare in the "Yellow" ocular impact category for up to one hour and 20 minutes per day in the late afternoons of April through September. Glare in the less severe "Green" ocular impact category may also be experienced by aviators using Runway 24 in these late spring through late summer months, bringing the totally maximum expected glare within the combined "Green" and "Yellow" range to a potential of just over 1.5 hours in June (Dudek 2021).

To minimize glare from the project, Mitigation Measures MM 4.1-6KC and MM 4.1-6CC would be implemented, which require the project proponent to demonstrate the solar panels and hardware are

designed to minimize glare. Based on this analysis, operation of the solar sites would result in less than significant impacts related to substantial adverse effects to daytime views due to new sources of glare.

The O&M building, energy storage facilities, and collector facilities could also generate glare that could be received by motorists during project operations; however, these structures are unlikely to incorporate particularly reflective exteriors and surfaces. The O&M building and energy storage facilities would also incorporate non-reflective materials. To further reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-7KC and MM 4.1-7CC, which require the use of non-reflective materials when feasible.

Therefore, based on the analysis presented above and with implementation of Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC, potential glare effects generated by the solar panels, O&M building, energy storage facilities, and collector facilities would be less than significant.

Mitigation Measures

Kern County

MM 4.1-5KC: Prior to construction and prior to final activation of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Department staff that the project site complies with the applicable provisions of the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.

MM 4.1-6KC: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department for review and final approval.

MM 4.1-7KC: Prior to final activation of the solar facility, the project operator shall demonstrate that the operations and maintenance building, energy storage facilities, and collector facilities utilize materials that minimize glare, as approved by the Kern County Planning and Natural Resources Department.

City of California City

MM 4.1-5CC: Prior to construction and prior to final activation of the solar facility, the project proponent shall demonstrate to the City of California City Community Development Department that the project site complies with the applicable standards regarding project lighting within the City and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the

desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.

MM 4.1-6CC: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the City of California City Community Development Department for review and final approval.

MM 4.1-7CC: Prior to final activation of the solar facility, the project operator shall demonstrate that the operations and maintenance building, energy storage facilities, and collector facilities utilize materials that minimize glare, as approved by the City of California City Community Development Department.

Level of Significance after Mitigation

Kern County

Impacts would be less than significant with implementation of Mitigation Measures MM 4.1-5KC through MM 4.1-7KC.

City of California City

Impacts would be less than significant with implementation of Mitigation Measures MM 4.1-5CC through MM 4.1-7CC.

Cumulative Setting, Impacts, and Mitigation Measures

As shown in Table 3-3, *Cumulative Project List*, there are 14 constructed and/or planned development projects in the area surrounding the project site which include utility-scale solar and wind energy production facilities. These projects have the potential to result in cumulative impacts to aesthetic resources when considered together with the project. The “scarcity” rating criterion is likely to be impacted by widespread development in the area, as unobstructed views of regional topographical features and undeveloped lands would be less available as acreage is developed with PV solar developments and wind energy projects, and/or as new associated transmission lines are constructed.

Figure 4.1-9a, *Photograph of Existing Visual Conditions*, below, shows the baseline image which has been revised to remove the Eland Solar Project. Figure 4.1-9b, *View from KOP 1 with the Project Simulated*, shows the visual simulation as provided in the Visual Impact Study (see Appendix B-1) which shows the project area of cumulative impact at KOP 1 inclusive of the approved, but not yet constructed, Eland Solar Project.

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ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-9a. KOP 1 – Photograph of Existing Visual Conditions



ZCC 24, Map No. 152 GPA 10, Map No. 152
CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.1-9b. View from KOP 1 with the Project Simulated

As the discussion and visual simulation above indicate, the project would contribute to cumulative significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. These projects have already created impacts on the sense of open areas generally associated with the California desert area. Solar projects in the Fremont Valley region have removed iconic types of vegetation, such as Joshua trees, that attract people to locate in desert communities, which is contrary to various goals of the County to promote tourism in the desert area. There are over 30,000 acres of already existing solar development in Eastern Kern County. The proposed project will add approximately 1,955 acres to this sum, which will result in cumulative impacts to aesthetics when considered together with the already existing development and other approved solar energy projects. Unobstructed views of regional topographical features and undeveloped lands would be less available as acreage is developed with solar projects that 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. Even with implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM 4.1-4CC, the project's contribution to significant impacts associated with visual character and scenic qualities in the Fremont Valley would be cumulatively considerable, and overall cumulative impacts would be significant and unavoidable.

The proposed project would result in less than significant impacts related to light and glare, with implementation of Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC. With similar mitigation measures to be implemented at the other potentially glare-inducing solar projects on Table 3-3, *Cumulative Project List*, cumulative impacts to light and glare would be less than significant.

Mitigation Measures

Kern County

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

City of California City

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

Level of Significance after Mitigation

Kern County

Despite implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-7KC, cumulative impacts would be significant and unavoidable because the project and cumulative projects would replace the undeveloped desert landscape with solar energy facilities, which would significantly affect the visual quality of the area. Impacts would remain significant with respect to degrading the visual character and quality of public views of the site and surroundings.

City of California City

Despite implementation of Mitigation Measures MM 4.1-1CC through MM 4.1-7CC, cumulative impacts would be significant and unavoidable because the project and cumulative projects would replace the undeveloped desert landscape with solar energy facilities, which would significantly affect the visual quality of the area. Impacts would remain significant with respect to degrading the visual character and quality of public views of the site and surroundings.

Section 4.2

Agriculture and Forestry Resources

4.2.1 Introduction

This section of the Draft EIR describes the affected environment and regulatory setting for agriculture and forestry resources for the project. It also describes the impacts on agriculture and forestry resources that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based, in part, on information provided in the Kern County *Agricultural Crop Report* (2020a) and prepared by the Kern County Department of Agriculture and Measurement Standards.

4.2.2 Environmental Setting

This section discusses the existing conditions related to agricultural resources within the project area, which includes the project site.

Regional Setting

Kern County covers approximately 8,132 square miles (5,204,480 acres) (US Census Bureau 2019). This total includes 1,334 square miles (853,909 acres) of harvested agricultural land (Kern County 2020a). Kern County has a long history of agricultural operations. According to the 2019 Kern County *Agricultural Crop Report*, agriculture in Kern County was worth approximately \$7.6 billion in 2019, which is an increase of nearly three percent from the 2018 crop value of approximately \$7.4 billion. The top five commodities for 2019 were grapes, almonds, pistachios, citrus, and milk, which made up more than \$5.5 billion (72 percent) of the County's total agricultural product value. The top twenty commodities make up more than 95 percent of the total value (Kern County 2020a).

Kern County is growing rapidly and ranks high on the list of California counties with issues related to urbanization and the loss of farmland (DOC 2015). As shown in Table 4.2-1, *2016-2018 Land Use Conversion in Kern County*, the California Department of Conservation (DOC) found that 6,076 acres of Important Farmland, which includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, were converted to non-agricultural uses between 2016 and 2018 (DOC 2019a). Approximately 5,906 net acres were converted from agricultural and other uses to urban/built-up land from 2016 to 2018 (DOC 2019a).

The project site is located in the Fremont Valley in the eastern portion of Kern County. Although there are many areas zoned for agricultural uses (including the project site) within the region, land uses in this part of the County consist primarily of undeveloped native desert landscape, interspersed with scattered residences, airport and military uses, and a few renewable energy projects.

Table 4.2-1. 2016-2018 Land Use Conversion in Kern County

Land Use Category	Total Acres 2016	Total Acres 2018	Net Acreage Changed
Prime Farmland	579,297	573,935	-5,362
Farmland of Statewide Importance	209,484	208,323	-1,161
Unique Farmland	91,321	91,768	447
Farmland of Local Importance	0	0	0
Important Farmland Subtotal	880,102	874,026	-6,076
Grazing Land	1,849,267	1,854,641	5,374
Agricultural Land Subtotal	2,729,369	2,728,667	-702
Urban and Built-up Land	159,178	165,084	5,906
Total Area Inventoried (including land uses not included in this table)	5,224,315	5,224,315	0

Source: DOC 2019a.

Local Setting

The project site is located in portions of unincorporated Kern County and the City of California City, north of the California City Municipal Airport. The majority of the project site is bisected by Washburn Boulevard (which is also the California City boundary) and Neuralia Road. The project site is adjacent to the approved Eland Solar project, south of the existing Springbok 1 and 2 Solar project and southeast of the Los Angeles Department of Water and Power Beacon solar facility.

Farmland

According to the DOC, Division of Land Resource Protection's Important Farmland Maps (DOC 2019b), there are no agricultural lands designated Prime Farmland, Farmland of Statewide Importance, or Unique Farmland located within the project site. (Note: these various farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below). The project site is designated as Nonagricultural or Natural Vegetation. This designation is one of several used by the Rural Land Mapping Project of the DOC to provide more detail on land uses that are classified under the Other Land designation. The Nonagricultural or Natural Vegetation designation includes several types of areas, including rocky/barren areas and grassland areas that do not qualify as grazing land (DOC 2019c). There are no important farmlands located adjacent to or in the vicinity of the project site and the project is not within the boundaries of an Agricultural Preserve.

Williamson Act Contract Lands

According to the County of Kern's Interactive County Map (GIS Tool), the project site does not support lands that are subject to Williamson Act contracts, either active or in nonrenewal. There are no lands under Williamson Act contracts adjacent to or in the vicinity of the project site.

Zoning

Kern County

The project parcels located in unincorporated Kern County are subject to the provisions of the Kern County Zoning Ordinance. The project parcels located in unincorporated Kern County have zone classifications of A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining).

City of California City

The project parcels located in the City of California City are subject to the provisions of the California City Zoning Regulations. The project parcels located in the City of California City have a zone classification of O/RA (Residential/Agriculture).

Forestry Resources

The project site is not situated on forest or timberland. No land in the vicinity of the project site is zoned as forestland or timberland, or for timberland production.

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. The FPPA ensures that, to the extent possible, federal programs are administered to be compatible with State, and local units of government, and private programs and policies to protect farmland.

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

The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they 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.

State

California Department of Conservation, Division of Land Resource Protection

The DOC applies the Natural Resources Conservation Service 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 through the Farmland Mapping and Monitoring Program (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. The minimum mapping unit for Grazing Land is 40 acres.
- **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, and 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. The Rural Land Mapping Project provides more detail on the land uses within the Other Land category for nine of the counties covered by the FMMP, including Kern County. The Rural Land categories include Rural Residential Land, Semi-Agricultural and Rural Commercial Land, Vacant or Disturbed Land,

Confined Animal Agriculture, Nonagricultural or Natural Vegetation, and Water (DOC 2019c). The project site is designated as Nonagricultural or Natural Vegetation. This is defined by the Rural Land Mapping Project as an area that is heavily wooded, rocky/barren areas, riparian and wetland areas, grassland areas which do not qualify as Grazing Land due to their size or land management restrictions, small water bodies and recreational water ski lakes, or constructed wetlands. The Nonagricultural or Natural Vegetation category is distinguished from the Vacant or Disturbed land based on the level of disturbance, relative location, and time period since disturbance occurred (DOC 2019c; DOC 2019d).

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Section 51200-51297.4), 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.

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the actual use (i.e., agricultural production) as opposed to its unrestricted market value. Each year the contract automatically renews unless a notice of nonrenewal or cancellation is filed. However, the application to cancel must be consistent with the criteria of the affected county or city. Nonrenewal or contract cancellation does not change a property's zoning. 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 2019e).

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 a 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.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and 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 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 an additional 35 percent 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 for the 20-year period.

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. Public Resources Code Section 21060.1 defines “agricultural land” as such: “Agricultural land means prime farmland, farmland of statewide importance or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for 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 that are intended primarily or to some extent 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, farm facilities, one single-family dwelling unit, cattle feed yards, dairies, dry land farming, livestock grazing, water storage, groundwater recharge acres, mineral, aggregate, 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. None of the parcels within the project site are designated as 8.1 – Intensive Agriculture.

- **8.2 Resource Reserve (minimum parcel size is 20 acres gross, except for 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 areas of mixed natural resource characteristics including rangeland, woodland, and wildlife habitat which occur in an established County water district. None of the parcels within the project site are designated as 8.2 - Resource Reserve.
- **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, dryland farming, and woodlands. None of the parcels within the project site are designated as 8.3 – Extensive Agriculture.
- **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.

Uses shall include but are not limited to the following: recreational activities; livestock grazing; dryland farming; ranching facilities; wildlife and botanical preserves; timber harvesting; one single-family dwelling unit; irrigated croplands; water storage or groundwater recharge areas; mineral; aggregate; petroleum exploration and extraction; open space and recreational uses; land within development areas subject to significant physical constraints; and state and federal lands that have been converted to private ownership. Thirty-five parcels within the project site are designated as 8.5 – Resource Management.

The policies, goals, and implementation measures in the Kern County General Plan for agricultural resources applicable to the project are provided below. The General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below, but as stated in Chapter 2, *Introduction* of this EIR, all policies, goals, and implementation measures in the 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 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 designations.
- 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.

Implementation 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 system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

The City of California City General Plan includes a specific land use designation for Controlled Development and Open Space, which identifies land designated for specific land development planning (O/RA). This designation is conditionally compatible with agricultural uses.

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 federal government or any of its agencies.

The project proponent has requested a change in zone classifications from A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A (Exclusive Agriculture). Pursuant to Sections 19.12.020 and 19.12.030 of the Kern County Zoning Ordinance, construction and operation of solar facilities on areas zoned A (Exclusive Agriculture) requires approval of a CUP. Solar facilities are considered to be a compatible use and are permitted on properties zoned for exclusive agricultural use with the approval of a CUP.

City of California City Zoning Regulations

The City of California City Zoning Regulations establish basic regulations under which land is developed. This includes allowable uses, building setback requirements, and development standards. Pursuant to state law, the regulations must be consistent with the City of California City General Plan. The Zoning Regulations apply to all property in the City of California City, except land owned by the federal government or any of its agencies. The project proponent has not requested a change in zone classifications for the project parcels located within the City of California City.

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 Williamson Act contracts. Therefore, a proposed solar project on contracted land would be required by Kern County to petition for an early cancellation of the contract. However, the project site does not contain lands under an active Williamson Act contract and, therefore, is not subject to these rules.

4.2.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts on agriculture and forest resources have been evaluated on a qualitative basis using a variety of resources, including the *Kern County Agricultural Crop Report* (Kern

County 2020a), Important Farmland Maps prepared by the DOC, and the analysis of applicable goals and policies related to agricultural resources in the Kern County and the City of California City General Plans. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

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 Natural Resources Agency, to nonagricultural uses;
- b) Conflict with existing zoning for agricultural use or a Williamson Act Contract;
- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
- d) Result in the loss of forestland or conversion of forestland to non-forest use;
- e) Involve other changes in the existing environment which, because of 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 Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code).

Kern County determined in the NOP/IS that the following environmental issue areas would result in no impacts, and therefore, are scoped out of this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Natural Resources Agency, to nonagricultural uses.
- b) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
- c) Result in the loss of forestland or conversion of forestland to non-forest use;
- d) Involve other changes in the existing environment which, because of their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use; or

- e) Result in the cancellation of an open space contract made pursuant to the California Land Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code).

As detailed in the IS/NOP, according to the California Department of Conservation (DOC), there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project site. Therefore, construction and/or operation of the proposed project would not result in the conversion of designated Farmland to a nonagricultural use. Additionally, none of the parcels included as part of the proposed project or property adjacent to or in the vicinity of the project are subject to a Williamson Act Land Use contract (Kern County GEODAT 2021). Therefore, project implementation would not 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 (Public Resources Code Section 15206(b)(3)). Additionally, as discussed in Section 4.10, *Hydrology and Water Quality*, the project site is located within the Fremont Valley Groundwater Basin which is not an adjudicated basin and has not been identified as being in or projected to be in an overdraft condition (DWR 2004). The proposed discretionary actions do not involve farming uses and are consistent with the Kern County Zoning Ordinance regulations for agricultural and resource management uses. Therefore, the potential for conflicts with Williamson Act Land Use contract are not anticipated and are considered to have no impact. There is no land in the vicinity of the proposed project site that is zoned as forest land, timberland, or lands zoned for timberland production. Thus, there would be no impacts related to loss of forest land or timberland, or the conversion of forest land to non-forest use. Therefore, no further analysis of these impacts is warranted in this EIR.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to agricultural resources, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.2-1: The project would conflict with existing zoning for agricultural use or a Williamson Act Contract.

According to available data, none of the parcels included as part of the proposed project or any property in the immediate vicinity of the project are subject to a Williamson Act Land Use contract (Kern County GEODAT 2021). The project site is not within an Agricultural Preserve. Historic land uses in the vicinity of the project have included livestock grazing, military uses, and open space activities such as off-road vehicle use. Although portions of the site are agriculturally zoned, the property has not been actively farmed.

Agricultural Zoning. As previously discussed, the project parcels located in unincorporated Kern County have zone classifications of A (Exclusive Agriculture), A-1 (Limited Agriculture), A-1 MH (Limited

Agriculture, Mobile Home Combining), PL RS (Platted Lands, Residential Suburban Combining), and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining). The Kern County General Plan encourages the development of alternative sources of energy, such as solar energy, while protecting the environment (see Section 4.11, *Land Use and Planning*, of this EIR, for additional goals and policies that promote solar energy development). Solar facilities are considered to be a compatible use and are permitted on properties zoned for exclusive agricultural use with the approval of a CUP.

The project proponent has requested a change in zone classifications from A-1, A-1 MH, PL RS, and PL RS MH to A. Pursuant to Sections 19.12.020 and 19.12.030 of the Kern County Zoning Ordinance, construction and operation of solar facilities on areas zoned A (Exclusive Agriculture) require approval of a CUP. Solar facilities are considered to be a compatible use and are permitted on properties zoned for exclusive agricultural use with the approval of a CUP. Therefore, with approval of the zone classifications to A and the CUP, the proposed project would not conflict with agricultural zoning.

The project parcels located in the City of California City have a zone classification of O/RA (Open Space/Residential/Agriculture). The City of California City is considering an amendment to its zoning ordinance to allow development of renewable energy generation facilities, such as the proposed solar power project, pursuant to approval of a CUP. If that does not occur, those parcels in the City of California City would be rezoned to M-1, which already allows for solar power projects and supporting facilities through a CUP. In either circumstance, with the approval of a CUP, the proposed project would be an allowable use within the proposed zoning, and would not conflict with agricultural zoning. Further, since there is no farming or other agricultural land uses on or near the project site, the project would not conflict with agricultural land uses. Project impacts involving proposed zone changes would be less than significant.

If at some future time the project is decommissioned and all solar facilities are removed, the land could be converted to various types of agricultural uses and there would be no impact involving a conflict with agricultural zoning.

Williamson Act Contract Lands. As discussed in the NOP/IS, according to the County of Kern's Interactive County Map (GIS Tool), the project site does not contain lands that are subject to Williamson Act contracts, either active or in nonrenewal. There are no lands under Williamson Act contracts adjacent to or in the vicinity of the project site. Therefore, the proposed project would not conflict with a Williamson Act contract and no impact would occur. If at some future time the project is decommissioned and all solar facilities removed, there would be an opportunity for another land owner/user to convert the site to some form of agricultural use and possibly enter into a Williamson Act Contract. The decommissioning itself would have no impact on any active Williamson Act Contracts.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for evaluating potential cumulative impacts to agricultural and forest resources is considered the Fremont Valley. This geographic scope was selected because the land within the region possesses relatively similar agricultural opportunities, soil conditions, climate, and water availability. Of the 14 cumulative projects identified in Table 3-3, *Cumulative Projects List*, of Chapter 3, *Project Description*, there are approximately 9 solar and non-solar projects proposed or approved throughout the Fremont Valley in Kern County. Of the 9 total projects in the Fremont Valley, none would be located on Prime Farmland and thus would not contribute to a cumulative loss of farmland.

Although development of the project would result in the conversion of land zoned for agricultural use to a non-agricultural use, the proposed project would not result in the loss of farmland as the project site is not located on land mapped by DOC as Important Farmland and has never been used for agriculture. Further, the development of solar power-generating facilities on the project site is not anticipated to affect the potential for agricultural production to occur in adjacent or more distant areas within the Fremont Valley, as the project's water needs are not substantial and would not result in a significant loss of water resources that could be applied for irrigation of farmland (see discussion of the project's less than significant impact on water supplies in Section 4.16, *Utilities and Service Systems*). It is possible that, in the future event that the project is decommissioned and the photovoltaic solar panels and associated facilities are removed, the project site could be devoted to farming or other agricultural uses. Therefore, the project would not substantially contribute to a cumulative impact related to agricultural resources in Kern County and the project's impact would be less than cumulatively considerable.

As the project would not affect any forest or timberland resources, it would have no cumulative effect on such resources.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Cumulative impacts would be less than significant.

City of California City

Cumulative impacts would be less than significant.

4.3.1 Introduction

This section of the EIR describes the affected air quality environment and regulatory setting for the project. It also describes the impacts on air quality that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable.

Information in this section is based primarily on the *Air Quality and Greenhouse Gas Assessment* prepared by Stantec (Stantec 2021a) located in Appendix C-1 of this EIR. An analysis of the project's health risk impacts is included in this report. 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 Eastern Kern Air Pollution Control District's (EKAPCD) guidelines for Implementation of California Environmental Quality Act (CEQA) (EKAPCD 1999). The *San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast Air Quality Management District (SCAQMD) Amicus Curiae Brief* is located in Appendix C-2, *Amicus Curiae Brief, Friant Ranch, SJVUAPCD*, and Appendix C-3, *Amicus Curiae Brief, Friant Ranch, SCAQMD* of this EIR.

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 Mojave Desert Air Basin (MDAB) and is under the jurisdiction of the EKAPCD. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada.

Regional Setting

The project site is located in the Mojave Desert portion of Kern County, within the MDAB. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and Central California valley regions by mountains (highest elevation about 10,000 feet) whose passes form the main channels for these air masses.

During the summer, the MDAB is generally influenced by a pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska as these frontal systems are weak and diffuse by

the time that they reach the desert. Therefore, most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south and the MDAB averages three to seven inches of rain annually. Thus, it is classified as a dry-hot desert climate where temperatures can be in excess of 95 degrees Fahrenheit for 60 to 70 days per year with almost no precipitation.

Kern County has an average annual temperature of 65.1 degrees Fahrenheit (°F), with an annual average high temperature of 76.8°F and an average annual low temperature of 53.4°F. Average annual rainfall in the county is 6.45 inches, and the County typically has an average of 274 sunny days per year (Appendix C-1, *Air Quality and Greenhouse Gas Assessment*, of this EIR).

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 pollutions. As required by the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide, suspended particulate matter (PM), and lead. Suspended PM has standards for both PM with an aerodynamic diameter of 10 micrometers or less (respirable PM, or PM₁₀) and PM with an aerodynamic diameter of 2.5 micrometers or less (fine PM, or PM_{2.5}). 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 for 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 a 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., the California Ambient Air Quality Standards [CAAQS]).

Table 4.3-1, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District 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 EKAPCD 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.”

Table 4.3-1. National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration	Attainment Status	Primary ³	Secondary ⁴	Attainment Status
Ozone	1-hour 8-hour	0.09 ppm 0.070 ppm	Non-Attainment	-- 0.070 ppm	-- 0.070 ppm	Non-Attainment (Marginal) ⁹
Carbon monoxide (CO)	1-hour 8-hour	20 ppm 9.0 ppm	Unclassified	35 ppm 9 ppm	-- --	Unclassified /Attainment
Nitrogen dioxide (NO ₂)	1-hour Annual Arithmetic Mean	0.18 ppm 0.030 ppm	Attainment	0.100 ppm ⁵ 0.053 ppm	-- 0.053 ppm	Unclassified
Sulfur dioxide (SO ₂)	1-hour 3-hour 24-hour Annual Arithmetic Mean	0.25 ppm -- 0.040 ppm --	Attainment	0.075 ppm ⁶ -- 0.014 ppm 0.030 ppm	-- 0.5 ppm -- --	Unclassified
Particulate matter less than 10 microns (PM ₁₀)	24-hour Annual Arithmetic Mean	50 µg/m ³ 20 µg/m ³	Non-Attainment	150 µg/m ³ --	150 µg/m ³ --	Unclassified /Attainment
Particulate matter less than 2.5 microns (PM _{2.5})	24-hour Annual Arithmetic Mean	-- 12 µg/m ³	Unclassified	35 µg/m ³ 12 µg/m ³	35 µg/m ³ 15 µg/m ³	Unclassified /Attainment
Lead ⁷	30-day Average Calendar Quarter Rolling 3-month Average	1.5 µg/m ³ -- --	Attainment	-- 1.5 µg/m ³ 0.15 µg/m ³	-- 1.5 µg/m ³ 0.15 µg/m ³	Unclassified /Attainment
Visibility reducing particles (VRP) ⁷	8-hour	8	Unclassified	No Federal Standards		
Sulfates	24-hour	25 µg/m ³	Attainment			
Hydrogen sulfide (H ₂ S)	1-hour	0.03 ppm (42 µg/m ³)	Unclassified			
Vinyl chloride	24-hour	0.01 ppm (42 µg/m ³)	Attainment			

Source: CARB 2016; EKAPCD 2018.

Notes:

ppm = parts per million; µg/m³ = micrograms per cubic meter; -- = No standard has been adopted for this averaging time

¹ CAAQS for ozone, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM_{2.5}, and VRP), are values that are not to be exceeded. All others are not to be equaled or exceeded.

² NAAQS (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year averaged over three years is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

³ Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

⁴ Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

⁵ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.100 ppm.

⁶ To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.075 ppm.

⁷ CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

⁸ Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

⁹ No federal 1-hour standard (revoked as of June 15, 2004).

As shown in Table 4.3-1, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, the EKAPCD is currently classified as nonattainment for the one-hour State ozone standard as well as nonattainment for the national and State eight-hour ozone standards. Additionally, the EKAPCD is classified as nonattainment for the State 24-hour PM₁₀ standard. The EKAPCD is currently in attainment and/or unclassified status for all other ambient air quality standards. California has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particulates; 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.

Local Air Quality

To assess localized CO impacts, the significance thresholds are based on the state CO standards, shown in Table 4.3-1, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, which are 20 parts per million (ppm) for 1-hour CO concentration levels and 9 ppm for 8-hour CO concentration levels. If CO concentration levels with the project would be less than the standards, then there would be no significant impact on local air quality. If future CO concentrations with the project would be above the standards, then the increase due to the project would determine if the impact would be significant or less than significant. A project would have a significant impact on local air quality if the project would result in an increase of 1 ppm or more 1-hour averaging time or 0.45 ppm or more for the 8-hour averaging time.

Ambient Air Monitoring

CARB has established and maintains a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] network) that work in conjunction with local air pollution control districts (APCDs) and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of eight stations that monitor various pollutant concentrations. The locations of these stations were chosen to meet monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest pollutant concentrations, representative concentrations in areas of high population density, the impact of major pollution emissions sources, and general background concentration levels.

The EKAPCD is responsible for monitoring air quality in the Kern County portion of the MDAB to determine whether pollutant concentrations meet State and national air quality standards. The nearest air monitoring station to the project site is the Mojave air monitoring station, located approximately 14 miles southwest of the project site. The Mojave monitoring station monitors ambient concentrations of ozone, lead, SO₂, PM₁₀ and PM_{2.5}. CO and NO₂ data were obtained from the Lancaster-43301 Division Street Monitoring Station as that is the closest station that monitors for these pollutants. Ambient monitoring data obtained for 2017 through 2019 is summarized below in Table 4.3-2, *Air Quality Data Summary (2017–2019)*.

Criteria Air Pollutants

The following is a general description of the physical and health effects from the governmentally regulated air pollutants shown in Table 4.3-2, *Air Quality Data Summary (2017–2019)*.

Table 4.3-2. Air Quality Data Summary (2017-2019)

Pollutant		Monitoring Year		
		2017	2018	2019
Ozone (O ₃) ¹	Maximum concentration (1-hour/8-hour average, ppm)	0.097/0.086	0.111/0.095	0.085/0.078
	Number of days state/national 1-hour standard exceeded	1/0	8/0	0/0
	Number of days national 8-hour standard exceeded (2015 Standard)	37	56	10
Nitrogen Dioxide (NO ₂) ²	Maximum concentration (1-hour average, ppm)	0.0465	0.0476	0.0498
	Annual average (state)	8	8	8
	Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter (PM _{2.5}) ¹	Maximum concentration (24-hour, µg/m ³)	26.9	39	19.8
	Annual Average (national/state, µg/m ³)	5.5/ NA	7.1/ NA	6.5/ NA
	Number of days national standard exceeded (measured/calculated) ³	0	2	0
Suspended Particulate Matter (PM ₁₀) ¹	Maximum concentration (24-hour, µg/m ³) (national/state)	93.4/85.7	93.1/86.5	248.7/240.8
	Annual Average (national/state, µg/m ³)	25.3/NA	26.7/ NA	23.7/22.0
	Number of days state standard exceeded (measured/calculated) ³	10/ NA	19/ NA	15/15
	Number of days national standard exceeded (measured/calculated) ³	0/ NA	0/0	2/2
Carbon Monoxide (CO) ²	Maximum concentration (1-hour average, ppm)	1.340	1.208	1.388
	Number of days state/national 8-hour standard exceeded	0	0	0
Sulfur Dioxide (SO ₂)	Maximum concentration (24-hour)	NA	NA	NA
	Annual Average	NA	NA	NA
	Number of days state standard exceeded	NA	NA	NA
Source: CARB 2021a.				
Notes:				
ppm = parts per million by volume, µg/m ³ = micrograms per cubic meter, NA=Not Available				
1. Based on ambient concentrations obtained from the Mojave-923 Poole Street Monitoring Station.				
2. Based on ambient concentrations obtained from the Lancaster-43301 Division Street Monitoring Station.				
3. Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.				

Ozone (O₃)

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving precursor organic compounds (POC) and nitrogen oxides (NO_x). POC and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of POC and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher

in the late spring, summer, and fall, when the long sunny days combine with summertime temperature inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Exposure to elevated ozone concentrations can cause eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

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).

Nitrogen Dioxide

Nitrogen dioxide (NO₂) is an air quality pollutant of concern because it acts as a respiratory irritant. NO₂ is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_x. A precursor to ozone formation, NO_x is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NO_x emitted from fuel combustion is in the form of nitric oxide (NO) and NO₂. NO is often converted to NO₂ when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Aside from its contribution to ozone formation, NO₂ can increase the risk of acute and chronic respiratory disease and reduce visibility. NO₂ may be visible as a coloring component of the air on high pollution days, especially in conjunction with high ozone levels.

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 three hours) to low levels of NO₂ may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory

illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO₂ may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects associated with NO₂ are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Epidemiological studies have also shown associations between NO₂ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and indirectly when combined with other precursors in acid rain and ozone. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_x can also impair visibility. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms. NO_x also contributes to visibility impairment (CAPCOA 2021).

Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and volatile organic compounds (VOCs), which include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on State rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

Health Effects

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described under the “Toxic Air Contaminants” heading below.

Carbon Monoxide (CO)

Carbon monoxide (CO) is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. 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. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease.

Health Effects

When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Exposure to elevated concentrations of CO weakens the heart's contractions and lowers the amount of oxygen carried by the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and increased daily mortality rate (Fierro, O'Rourke, and Burgess 2001).

Particulate Matter (PM₁₀ and PM_{2.5})

Particulates less than 10 microns in diameter (PM₁₀) and less than 2.5 microns in diameter (PM_{2.5}) can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. According to a study by CARB, exposure to ambient PM_{2.5} can be associated with approximately 7,300 to 11,000 annual premature deaths statewide. Particulates also can damage materials and reduce visibility. Research has indicated that there are associations between increased levels of ambient particulate matter and increased adverse respiratory health. For PM₁₀, there are associations between particulate levels and decreased pulmonary function, increased number of asthma attacks, increased asthma medication usage, increased emergency room visits, and hospital admissions for respiratory illness, and increased daily mortality.

Health Effects

PM₁₀ and PM_{2.5} particles are small enough—about one seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system’s natural defenses and can be trapped in the nose, throat, and upper respiratory tract. Health effects from exposure to PM₁₀ and PM_{2.5} begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM₁₀ and PM_{2.5} can aggravate respiratory disease and cause lung damage, cancer, and premature death. Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of PM₁₀. Of greatest concern are recent studies that link PM₁₀ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM₁₀ can also damage 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 (Air & Waste Management 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al. 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter (DPM) causes about 250 excess cancer cases per year in California (Kern County 2006).

Sulfur Dioxide (SO₂)

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO₂) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

SO₂ is a colorless, irritating gas with a “rotten egg” smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically, SO₂ was a pollutant of concern in Kern County, but with the successful implementation of regulations, the levels have been reduced significantly.

Health Effects

High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO₂ include aggravation of lung diseases, especially bronchitis, and constricting of breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Short-term exposures of individuals to elevated SO₂ levels during moderate activity may result in health effects including breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other health effects that have been associated with longer-term exposures to high concentrations of SO₂, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO₂ also is a major precursor to particulate matter that is 2.5 microns or less (PM_{2.5}), which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SO₂ not only has a bad odor but can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. SO₂ can also irritate the lung and throat at concentrations greater than 6 ppm in many people; impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

SO₂ tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among “mouth breathers,” e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations;
- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations (individuals with asthma are especially susceptible to these effects. The elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population);
- Increased respiratory tract infections associated with longer term, lower level exposures to SO₂ and acid aerosols; and

- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities due to long-term exposure.

SO₂ easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for eight hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

Increases in SO₂ concentrations accelerate the corrosion of metals, probably through the formation of acids. SO₂ is a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Increased SO₂ also contributes to impaired visibility. Particulate sulfate, much of which is derived from SO₂ emissions, is a major component of the complex total suspended particulate mixture.

Sulfates (SO₄²⁻)

Sulfates (SO₄²⁻) are particulate product that comes from the combustion of sulfur-containing fossil fuels. When sulfur monoxide or SO₂ is exposed to oxygen, it precipitates out into sulfates (SO₃ or SO₄). 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 SO₂ 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 cardiopulmonary disease. When acidic pollutants and particulates are also present, SO₂ tends to have an even more toxic effect. In addition to particulates, SO₃ and SO₄ 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 2021a).

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. The EKAPCD no longer monitors ambient levels of atmospheric lead in the MDAB.

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 2021b).

This highly toxic metal has been used for many years in everyday products, and has been found to cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children six years old and under are most at risk, because their bodies are growing quickly.

If not detected early, children with high levels of lead in their bodies can suffer from:

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

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

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

Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products.

Other Criteria Pollutants

Hydrogen Sulfide (H₂S)

Hydrogen sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. H₂S in the atmosphere would likely oxidize into SO₂ that can lead to acid rain. At low concentrations H₂S, 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 H₂S 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 H₂S (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 H₂S (0.00011–0.00033 ppm). Deaths due to breathing in large amounts of H₂S 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 2020):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.

- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (USEPA 2020):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.
- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed “vinyl chloride disease,” which is characterized by Raynaud’s phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified (USEPA 2020):

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.
- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.
- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages during their wives’ pregnancies, although other studies have not supported these findings.
- Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

Visibility-Reducing Particles

Visibility-reducing particles is a measure of visibility. CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the state as being in attainment or nonattainment. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California’s attainment status with respect to visibility-reducing particles is currently designated as unclassified.

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are emitted from stationary sources, area-wide sources, mobile sources, and natural sources. Assembly Bill (AB) 1807 sets forth a procedure for the identification and control of TACs in California and defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health. Because no safe levels of TACs can be determined, there are no ambient air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. Although construction activity is short-lived, it may increase TAC concentrations in the short term at nearby sensitive receptors. A common source of TAC emissions during construction activities is diesel particulate matter (DPM) due to the operation of diesel-powered equipment and heavy-duty trucks. Because DPM is the primary contaminant of concern for construction of the project and would be the TAC emitted in the largest quantity, health risks were assessed as they relate to DPM exposure.

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, the transport refrigeration units. Stationary sources contribute about 5 percent of total DPM.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that approximately 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (OEHHA – ALA 2001).

Airborne Fungus (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 2021a). It should be noted that the incident rate for Valley Fever in Kern County within the MDAB is less than the incident rate in Kern County within the San Joaquin Valley Air Basin, where the highest incidence rate within California occurs.

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 2021a).

Table 4.3-3, *Range of Complications 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 Complications 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 2021b.

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 (DOC 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 Centers for Disease Control and Prevention (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 PM_{2.5} (averaged from 2000 to 2016) as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard 2020).

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed 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, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. Ambient air quality standards were established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. Standards are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases.

Solar Facility

The project parcels are generally located in an isolated area, away from sensitive receptors. The sensitive receptors with the highest potential to be affected by the project include those semi-rural residential land uses located in the nearby communities in Kern County and California City. The nearest residences in Kern County (in the community of Fremont) are located approximately 1,200 feet from the western project parcels (Site 1) and the nearest residences in California City are located approximately 3,300 feet from the southernmost project parcel. Some of the proposed routes for the collector lines would run adjacent to noise-sensitive receivers in a single-family residential neighborhood north of Phillips Road. Figure 4.12-5, *Locations of Noise-Sensitive Receptors Closest to Project Site*, shows the general locations of noise-sensitive receivers in the project area.

4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including USEPA, CARB, and local air districts such as the EKAPCD. 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 MDAB, which is under the jurisdiction of the EKAPCD.

Federal

US Environmental Protection Agency (USEPA)

USEPA is the federal agency responsible for overseeing state air programs as they relate to the federal CAA, approving the state implementation plans (SIPs), establishing NAAQS and setting emission standards for mobile sources under federal jurisdiction. USEPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

Clean Air Act

The CAA is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes USEPA to establish NAAQS to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

One of the goals of the CAA was to set and achieve NAAQS in every state by 1975 in order to address the public health and welfare risks posed by certain widespread air pollutants. The setting of these pollutant standards was coupled with directing the states to develop SIPs, applicable to appropriate industrial sources in the state, in order to achieve these standards. The CAA was amended in 1977 and 1990 primarily to set new goals (dates) for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines.

Section 112 of the CAA addresses emissions of hazardous air pollutants. Prior to 1990, CAA established a risk-based program under which only a few standards were developed. The 1990 CAA Amendments revised Section 112 to first require issuance of technology-based standards for major sources and certain area sources. "Major sources" are defined as a stationary source or group of stationary sources that emit or have the potential to emit 10 tons per year or more of a hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. An "area source" is any stationary source that is not a major source.

For major sources, Section 112 requires that USEPA establish emission standards that require the maximum degree of reduction in emissions of hazardous air pollutants. These emission standards are commonly referred to as "maximum achievable control technology" or "MACT" standards. Eight years after the technology-based MACT standards are issued for a source category, USEPA is required to review those standards to determine whether any residual risk exists for that source category and, if necessary, revise the standards to address such risk.

State

California Air Resources Board (CARB)

CARB, a department of the California Environmental Protection Agency (Cal/EPA), 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 California CAA, 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 California CAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide and vinyl chloride (there are currently no NAAQS for these latter pollutants). They are also generally more stringent than the national standards in most cases, although recently promulgated NAAQS for 1-hour NO₂ and SO₂ can in some instances be more stringent than the respective CAAQS.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities

routinely release into their local air basin. Each APCD and AQMD in the state ranks the data into high, intermediate, and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume, and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate their equipment which must meet specified program emission requirements, throughout California, without having to obtain individual permits from local air districts. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 CCR Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO_x emissions for owners of fleets of diesel-fueled off-road vehicles. It applies to equipment fleets of three specific sizes, and the target emission rates are reduced over time with full implementation by 2023 for large and medium fleets and 2028 for small fleets.

Title V and Extreme Designation

Title V of the CAA, as amended in 1990, creates an operating permit program for certain defined sources. In general, owner/operators of defined industrial or commercial sources that emit more than 25 tons per year (tpy) of NO_x and ROG must process a Title V permit. In "Extreme Designation" areas, the definition of a major source which requires Title V permitting changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and USEPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

California Renewables Portfolio Standard Program

Established in 2002 under SB 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. In 2015, SB 350 further increased the RPS to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. The California Public Utilities Commission (CPUC) and the California Energy Commission are jointly responsible for implementing the program. Southern California Edison is on track to meeting these obligations, and currently has contracts to generate 41.4 percent of its electricity from renewable resources by the year 2020 (CPUC 2021). While not assumed in the analysis below, the legislature is likely to increase the existing RPS requirements; more specifically, SB 100 [2017] proposes to require a 50 percent renewable resource target by December 31, 2026, and 60 percent by December 31, 2030.

California State Implementation Plan

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to USEPA for approval and publication in the Federal Register. As discussed below, the *EKAPCD 2017 Ozone Attainment Plan* informs the district's portion of the SIP.

Local

Kern County General Plan

The goals, policies, and implementation measures in the Kern County General Plan applicable to air quality as related to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below.

Chapter 1. Land Use, Open Space and Conservation Element

Air Quality

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.

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 (CEQA), 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 CEQA.

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 district efforts to reduce PM₁₀ and PM_{2.5} emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

Implementation Measures

Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.

Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including but not limited to:

1. Minimizing idling time.
2. Electrical overnight plug-ins.

Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:

1. Pave dirt roads within the development.
2. Pave outside storage areas.
3. Provide additional low 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 EPA certified, low emission natural gas fireplaces.
7. Provide bicycle lockers and shower facilities onsite.
8. Increase the amount of landscaping beyond what is required in the Zoning Ordinance (Ch. 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 PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Chapter 5. Energy Element

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 fuel 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.

California City General Plan

Chapter 5. Open Space and Conservation Element

5.15 Conservation Goals, Policies, and Implementation Measures

Goal

- Promote the improvement of air quality and the maintenance of State and federal air quality standards.

Policies

- Cooperate with the Kern County Air Pollution Control District (APCD) to implement the APCD's Air Quality Attainment Plan.
- Continue to enforce the City's grading code, along with dust control and other rules and measures through the Air Pollution Control District to mitigate air quality effects during the construction of new development.
- Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Implementation Measures

Measure C-5: The City shall participate with the California Air Resources Board (CARB) and/or the Kern County Air Pollution Control District (APCD) on programs to reduce mobile and stationary source emissions.

Measure C-6: The City shall implement the following measures associated with air pollutant emissions from new development proposals in the General Plan Planning Area.

- Evaluate proposals for discretionary projects to ensure that the project complies with air quality standards.
- For development proposals not subject to discretionary approval or environmental review, an air quality analysis shall be required as part of the site plan review (DRC) process.
- For development proposals subject to a discretionary approval (General Plan Amendment, Zone Change, or Subdivision) and environmental review, an air quality analysis shall be required as a part of the environmental review process.

Measure C-10: The City shall require that construction of new development proposals comply with the City's Grading Code and all adopted applicable dust control measures of the Kern County Air Pollution Control District (APCD).

Measure C-11: The City shall implement the following measures to reduce the potential impact of odors and airborne pollutants on surrounding sensitive land uses:

- Utilize buffer areas for commercial, industrial, or public facility projects that generate odors in areas adjacent to sensitive land uses (such as residences and schools).
- Evaluate new development proposals regarding whether they may cause nuisance from odors and airborne pollutants if located near residential areas or sensitive receptors.

Measure C-12: The following measures shall be incorporated into new development proposals, as applicable, to address the goals and policies of the General Plan related to air quality. Verification of these measures shall occur during site plan review and building inspection:

- During grading operations, project applicant/developer shall be responsible for the application of water to the development site at least twice daily to mitigate the impact of dust and PM₁₀ emissions. Spraying should be sufficient to ensure that soils remain damp, with the frequency of spraying dependent on weather conditions. Graded areas that are to be left undeveloped or unpaved for more than six weeks are to be sufficiently dust controlled through use of an applied surface agent, daily watering, or revegetated.
- During grading operations, all activity should be restricted to periods of low wind generally considered under 25 miles per hour, to reduce dust emissions.
- Construction speed limits will be posted at 15 miles per hour. Preparation of roadway surfaces in a phased manner (where segments of the route are graded in succession) will greatly minimize the amount of time the surfaces are left exposed, thereby reducing vehicle-related dust emissions.

Air Quality Management Plan

As required by the federal and state CAAs, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the standards have been achieved. Jurisdictions of nonattainment areas also are required to prepare an air quality management plan that includes strategies for achieving attainment. The EKAPCD has adopted an attainment plan (2017 Ozone Attainment Plan for 2008 Federal 75 ppb 8- hour Ozone Standard [EKAPCD Ozone Plan]) for ozone

pursuant to the federal CAA, which serves as the district's air quality management plan. The EKAPCD Ozone Plan provided an update to the EKAPCD's *1994 Ozone Attainment Demonstration (Attainment Plan)* and established a goal of being in attainment for the eight-hour NAAQS for ozone by the "Serious" classification deadline of December 31, 2020. The EKAPCD Ozone Plan includes planning all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008, eight-hour ozone NAAQS by 2020.

Particulate matter (PM_{2.5} and PM₁₀) attainment strategies for NAAQS in Eastern Kern County have been subdivided into three areas: the Indian Wells Valley (IWV) area, the Kern River/Cummings Valley (KR/CV) area, and the remainder of the EKAPCD's jurisdiction, which includes the project site. The IWV and KR/CV zones are considered separate planning areas for PM_{2.5} and PM₁₀ and have their own attainment strategies. The remainder of the EKAPCD area, where the project is located, is designated unclassified/attainment for the NAAQS for PM_{2.5} and PM₁₀ standards. Therefore, the project site is not under the jurisdiction of any PM_{2.5} and PM₁₀ attainment plans. Although the project is located in an area that is in attainment for NAAQS standards, the area is considered in nonattainment for the CAAQS for 1-hour ozone, 8-hour ozone, and PM₁₀. Air quality impacts are controlled locally through and provisions of EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations.

Eastern Kern Air Pollution Control District

The air pollution control agency for the Kern County portion of the MDAB is the EKAPCD. The EKAPCD develops plans and implements control measures in its jurisdiction. These controls primarily affect stationary sources such as factories and plants. The EKAPCD implements air quality programs required by state and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The EKAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the MDAB portion of Kern County.

The EKAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. The district established and enforces rules and regulations based on federal and state air pollution laws. Applicable rules are as follows:

Regulation II - Permits: List D addresses permit applications involving a TAC and provides risk management guidance for the EKAPCD to determine compliance with EKAPCD Rules 419 and 423, parts of Regulation IV, Section 41700 and Division 26, Part 6 of the California Health and Safety Code, CARB's toxic air contaminant control program, and Title III of the 1990 federal CAA Amendments. Health risk shall be determined following the most current Office of Environmental Health Hazard Assessment Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015).

Rule 201: Rule 201 establishes permitting requirements for stationary sources. Although the proposed project does not involve traditional stationary sources, on March 12, 2015, the EKAPCD adopted rules requiring commercial solar facilities to obtain Authority to Construct and Permit to Operate approval under Rule 201 to address fugitive dust emissions. Under Rule 201, these projects would be required to submit a Fugitive Dust Emissions Control Plan in accordance with Rule 402. In addition, the district is requiring a Fugitive Dust Emissions Monitoring Plan with a recommendation for each facility to install upwind and downwind particulate matter air monitoring, utilization of an Alternative Air Monitoring Strategy, or joining into the EKAPCD regional fugitive dust monitoring network. The monitoring will be used to demonstrate compliance with the District Rules and Regulations.

Rule 210.1: Rule 210.1 establishes stationary source offset levels for new and modified stationary sources of air pollutants. Under this rule, the EKAPCD has established required offsets for when the emissions from a source exceed the following trigger levels:

- PM_{10} – 15 tons/year
- SO_x (as SO_2) – 27 tons/year
- VOCs – 25 tons/year
- NO_x (as NO_2) – 25 tons/year

Rule 401 – Visible Emissions: Rule 401 of the EKAPCD’s rules and regulations addresses discharge into the atmosphere of visible emissions from any single source. Visible emissions are described by the EKAPCD as a plume of dust or exhaust created by human-made or natural sources. A violation is a discharge for a period or periods aggregating more than 3 minutes in any 1 hour which is:

- A. As dark or darker in shade as designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
- B. Of such opacity as to obscure an observer’s view to a degree equal to or greater than does smoke described in Subsection A or 20 percent opacity.

Rule 402 – Fugitive Dust: Rule 402 of the EKAPCD’s rules and regulations addresses significant human-made dust sources from large operations. A large operation is defined as “any active operation, including vehicle movement on unpaved roadways, on property involving in excess of 100 contiguous acres of disturbed surface area, or any earth-moving activity exceeding a daily volume of 7,700 cubic meters (10,000 cubic yards) three times during the most recent 365-day period.” Rule 402 applies to specified bulk storage, earthmoving, construction and demolition, and human-made conditions resulting in wind erosion, and contains the following requirements:

1. A person shall not cause or allow emissions of fugitive dust from any active operation to remain visible in the atmosphere beyond the property line of the emission source, excluding unpaved roadways.
2. A person shall utilize one or more Reasonably Available Control Measures to minimize fugitive dust emissions from each source type that is part of any active operation, including unpaved roadways.
3. A person shall not cause or allow downwind PM_{10} ambient concentrations to increase more than $50 \mu\text{g}/\text{m}^3$ above downwind concentrations as determined by simultaneous upwind and downwind sampling utilizing high-volume particulate matter samplers or other USEPA-approved equivalent method(s).
4. No person shall conduct a large operation without either: (1) conducting onsite PM_{10} air quality monitoring and associated recordkeeping; or (2) filing for and obtaining an approved fugitive dust emission control plan.

Additionally, pursuant to Rule 402, an owner or operator of a Large Operation will be required to submit a Fugitive Dust Control Plan to the EKAPCD prior to the start of any earthmoving activity. The project shall not commence until the EKAPCD has approved or conditionally approved the plan.

Rule 404.1: Rule 404.1 pertains to Particulate Matter Concentrations – Desert Basin and states:

- A person shall not discharge into the atmosphere from any single source operation, in service on the date this Rule is adopted, particulate matter in excess of 0.2 grains per cubic foot of gas at standard conditions.
- A person shall not discharge into the atmosphere from any single source operation, the construction or modification of which commenced after the adoption of this Rule, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 419 – Nuisance: Rule 419 states that a person shall not discharge from any source whatsoever such quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

Rule 423 – National Emission Standards for Hazardous Air Pollutants and Source Categories (NESHAPS): All sources of hazardous air pollution shall comply with applicable standards, criteria and requirements set forth therein of provisions of Title 40, Chapter I, Parts 61 and 63, Code of Federal Regulations.

Additionally, the EKAPCD has determined that commercial solar power plants generate fugitive dust emissions (PM₁₀) in Eastern Kern County. Therefore, in accordance with Rule 201 (Permits Required for Stationary Sources) and 210.1 (New and Modified Stationary Source Review, NSR), the EKAPCD is requiring that each commercial solar facility obtain a district air permit.

To assist in compliance with EKAPCD rules, including fugitive dust (Rule 402), the EKAPCD is requesting that each facility install upwind and downwind particulate matter air monitoring. The particulate matter air monitors will assist solar facility operators in showing and maintaining compliance with EKAPCD rules and regulations.

2017 Ozone Attainment Plan

In 2008, USEPA adopted a more stringent 8-hour ozone NAAQS of 0.075 ppm. Although the EKAPCD attained the 1997 8-hour ozone NAAQS, and the IWV planning area met the new (2008) ozone NAAQS, the EKAPCD's Design Value was higher than 0.075 ppm. In 2012, a portion of the EKAPCD was classified "marginal" nonattainment pursuant to the 2008, 8-hour Ozone NAAQS Air Quality Designations. However, the EKAPCD failed to meet the 0.075 ppm standard by the applicable attainment date and was reclassified as "moderate" nonattainment, effective June 3, 2016. As a result, the EKAPCD was required to submit a SIP revision for the nonattainment area by January 1, 2017, which showed compliance with statutory and regulatory conditions applicable to the "moderate" designation (EKAPCD 2017).

The EKAPCD, in partnership with CARB, conducted photochemical modeling along with supplemental analyses to determine whether the EKAPCD could attain the 2008 ozone NAAQS by the "moderate" nonattainment deadline. Modeling indicated the EKAPCD would not meet the 0.075 ppm standard by the moderate deadline but could attain it by 2020, which is the attainment date for "serious" nonattainment areas. Pursuant to Section 181(b)(3) of the CAA "Voluntary Reclassification," the EKAPCD requested CARB formally submit a request to USEPA asking for voluntary reclassification of the EKAPCD from "moderate" to "serious" nonattainment for the 2008, 8-hour ozone NAAQS, and revise the attainment date

to December 31, 2020 (EKAPCD 2017). USEPA reclassified the EKAPCD (except for the IWV planning area) as “serious” nonattainment on August 6, 2018 (USEPA 2018).

The 2017 Ozone Attainment Plan was adopted by EKAPCD on July 27, 2017, which addresses all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour ozone NAAQS by 2020. CARB approved the 2017 Ozone Attainment Plan as a revision to the SIP and submitted it to USEPA on October 25, 2017 (CARB 2017). Effective August 6, 2018, USEPA granted CARB's request and reclassified the Eastern Kern ozone nonattainment area as Serious for the 2008 ozone NAAQS with a new maximum attainment date of July 20, 2021. By letter dated May 15, 2021, CARB submitted a request from the EKAPCD to USEPA to voluntarily reclassify the Eastern Kern ozone nonattainment area from Serious to Severe for the 2008 ozone NAAQS (USEPA 2021). Effective July 7, 2021, USEPA is granting the request to reclassify the Eastern Kern, California ozone nonattainment area from “Serious” to “Severe” for the 2008 ozone NAAQS (USEPA 2021).

Air Quality Conformity Determination for Transportation Plans and Programs

The CAA amendments of 1990 require a finding to be made stating that any project, program, or plan subject to approval by a metropolitan planning organization conforms to air plans for attainment of air quality standards. Kern Council of Governments (COG) is designated the Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, Kern COG models air quality projections on population projections in conjunction with current general plan designations and estimated vehicle miles as well as the current Regional Transportation Plan 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 (SJVAB) and the MDAB.

Each air basin has its own plans and pollutant budgets. Kern COG makes conformity findings for each air basin. Kern County recently prepared a draft 8-hour ozone air quality conformity analysis to analyze Kern County’s federally approved Federal Transportation Improvement Program and the 2018 Regional Transportation Plan. The conformity findings conclude that all air quality conformity requirements have been met (Kern COG 2018).

Kern County Public Health Services Department

Section 101080 of the California Health and Safety Code authorizes a local health officer to declare a local health emergency in the health officer’s jurisdiction, or any part thereof, when the health officer determines that there is an imminent and proximate threat of the introduction of any contagious, infections, or communicable disease, chemical agent, non-communicable biological agent, toxin, or radioactive agent. On April 2, 2020, the Kern County Health Officer issued an order that was implemented to garner additional tools to assist with Kern County’s compliance with Executive Order N-33-20 issued by the governor of the State of California and the California Department of Public Health’s gathering guidance due to COVID-19. The April 2, 2020, order was rescinded on May 2, 2020, by the Kern County Health Officer. The Kern County Public Health Services Department and the Kern County Health Officer continue to provide guidance and recommendations for residents and business of Kern County to safely conduct business, including construction activities, during this COVID-19 pandemic.

Kern County Best Management Practices for Dust Management

In 2013, solar developers and planners from Los Angeles and Kern Counties began a series of meetings to discuss the best practices for protecting air quality and minimizing construction impacts from solar projects. The process incorporated feedback from the Mojave Air and Space Port, members of the Mojave Chamber of Commerce, Rosamond Municipal Advisory Council, and numerous other community leaders. Subsequent to these meetings, Kern County has developed a new approach to best control fugitive dust emissions and improve air quality in the high desert. The County's approach recognizes that effective dust control management must be site-specific and cannot be "one-size-fits-all" because standard methods do not adequately meet the challenges of such a unique environment as the Mojave Desert region. An effective strategy has to be based on soil conditions, topography, adjacent land uses, and wind direction.

Conditions imposed on the new solar projects in Kern County are more extensive and rigorous than ever before. These include:

- Development of a Site Specific Dust Control Plan that considers ongoing community stakeholder input, to the extent feasible and practicable.
- Use of Global Positioning System (GPS) or lasers to level posts, generally avoiding grading except when elevation changes exceed design requirements.
- When grading is unavoidable, it is to be phased and done with the application of approved chemical dust palliatives (chemical substances applied to a road surface to reduce airborne dust) that stabilize the earth.
- Use of dust suppression measures during road surface preparation activities, including grading and compaction.
- Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV – the wind speed at which erosion starts) equal to or greater than 100 centimeters per second.
- If ground is cleared, plant roots must be left in place where possible.
- Expanded on-site watering processes.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved (i.e., without asphalt) surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard.
- Sending mailings to residents within 1,000 feet of a project site.

Kern County is also carefully monitoring all solar construction activities to ensure that all mitigation measures are followed and are adequate to minimize dust-related health concerns.

4.3.4 Impacts and Mitigation Measures

Methodology

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality district in the project area, approved CEQA air quality checklists, and other federal criteria. The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with construction, operation, and maintenance of the project. As described below, this chapter is based on the methods and findings in the Air Quality Report prepared for the project (located in Appendix C-1, *Air Quality and Greenhouse Gas Assessment*, of this EIR), which was prepared in accordance with Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* documents.

Pollutant Emissions

The proposed project's emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutants associated with both construction and operation of a variety of land use projects. The model quantifies emissions from construction and operations (including vehicle use).

Construction Modeling Assumptions

Construction of the proposed project would take approximately 12 to 18 months. As a conservative analysis, it was assumed that construction of the project would be broken up into five phases within a 12-month period and there would be overlapping between each phase:

- Phase 1: Site Preparation and Grading (84 workdays)
- Phase 2: Tracker Foundations (125 workdays)
- Phase 3: Underground Cabling (125 workdays)
- Phase 4: Mechanical Installation (146 workdays)
- Phase 5: Electrical/Instrumentation Work (167 workdays)

Construction emissions can vary substantially from day to day depending on the level of activity, the type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM₁₀ and PM_{2.5}).

On-road mobile sources consist of employee and vendor vehicle trips. The number of vehicle trips that would be produced during construction were based on the Traffic Impact Analysis (Appendix K of this EIR) prepared for the project. The number of vehicle trips varies by month depending on which construction phases are active, which affects the number of employees and materials delivery. The monthly trips were

summarized for the entirety of the construction schedule by phase and divided by the total number of workdays to obtain the average daily trips for employees and vendors.

Operational Modeling Assumptions

Once the project is constructed, maintenance would generally be limited to cleaning the PV panels, monitoring electricity generation, site security, and facility maintenance, including replacing or repairing inverters, wiring, and PV modules. The project would require an operational staff of up to 20 full-time employees. It is possible that the project would share operations and maintenance (O&M), substation, energy storage system, and/or transmission facilities with future energy projects nearby, and in that case the number of on-site workers would be reduced. However, the model was run using a worst-case scenario of 20 employees. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

Health Risk Assessment Methodology

Construction

The significance threshold for health risks differs from that used for criteria pollutants in that no specific air quality standards have been established for DPM emissions or many other TACs. Instead, significance thresholds are determined based on an analysis of the number of excess health risks relative to a chosen risk level. Due to that the construction activities would be temporary, episodic, and occur over a relatively large area, and that the nearest sensitive receptors to the solar facility are located approximately 0.2 mile from the project site, health impacts from TAC emissions during project construction were qualitatively analyzed and no air dispersion modeling was conducted.

Operation

Health impacts from TAC emissions during the operational phase of the project are not expected because on-site routine maintenance and periodic PV panel washing, and off-site employee-commute trips would not be a substantial source of ongoing TAC emissions.

Thresholds of Significance

The EKAPCD's Guidelines For Implementation of The California Environmental Quality Act (CEQA) of 1970, As Amended (EKAPCD CEQA Implementation Document), adopted in July 11, 1996, and Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impacts Reports (Kern County Environmental Checklist), dated December 1, 2006, identify the criteria as established in Appendix G of the CEQA Guidelines at the time to determine if a project could potentially have a significant adverse effect to air quality. However, the CEQA Guidelines have been updated since publication of the EKAPCD CEQA Implementation Document or the Kern County Environmental Checklist. As such, these updated CEQA thresholds have been included below and would be used to determine if a project could potentially have a significant adverse effect to air quality.

The current CEQA *Guidelines* state that a project could potentially have a significant adverse effect to air quality if it would:

- a. Conflict with or obstructs implementation of the applicable air quality plan;
- b. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. Specifically, if implementation of the project would exceed any of the following adopted thresholds of EKAPCD:
 1. Operational and Area Sources:
 - i. Reactive organic gases (ROG) – 25 tons per year
 - ii. Oxides of nitrogen (NO_x) – 25 tons per year
 - iii. Oxides of sulfur (SO_x) – 27 tons per year for SO_x (as SO₂)
 - iv. Particulate matter (PM₁₀) – 15 tons per year
 2. Stationary Sources – as determined by District Rules:
 - i. Severe nonattainment: 25 tons per year of any nonattainment pollutant
 - ii. Extreme nonattainment: 10 tons per year

The above adopted thresholds are also used for the purposes of determining cumulative effects as the baseline for considerable.
- c. Expose sensitive receptors to substantial pollutant concentrations;
 1. Cancer Risk: Emit Carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in on million.
 2. Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.
- d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Eastern Kern Air Pollution Control District

The EKAPCD recommends the following daily quantitative regional significance thresholds for long-term project operation in the western portion of the MDAB:

- 137 pounds per day of ROG
- 137 pounds per day of NO_x

Additionally, the EKAPCD has determined that a project would not have a significant impact on air quality if its operation:

- Emits less than the offset trigger levels set forth in Subsection III.B.3 of KCAPCD's Rule 210.1 (from all project sources subject to EKAPCD Rule 201, New and Modified Source Review Rule);
- Does not cause or contribute to an exceedance of NAAQS or CAAQS;

- Does not exceed the District health risk public notification thresholds adopted by the EKAPCD Board; or,
- Is consistent with adopted federal and state Air Quality Management Plans.

For health risk management, the EKAPCD has established the following criteria for land use projects subject to EKAPCD Regulation II (Permits List and Criteria) and Rule 208.2 (Criteria for Finding No Significant Environmental Impact):

- Cancer health risk shall be considered insignificant if expected increase in cancer risk is less than 20 in one million;
- Noncancer health risk is considered insignificant if expected increase in chronic hazard index is less than or equal to 1; or
- Noncancer health risk is considered insignificant if expected increase in acute hazard index is less than or equal to 1.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to air quality, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

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 is discussed below for construction and operation.

Air quality impacts are controlled through policies and provisions of the EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The California CAA 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 Plan prepared for the EKAPCD 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. Effective July 26, 2021, USEPA is taking final action to approve the 2017 Eastern Kern Ozone SIP as meeting all the applicable ozone nonattainment area requirements except for the contingency measure requirement, for which USEPA is taking final action to conditionally approve, and the reasonably available control measures and attainment demonstration requirements, for which USEPA is deferring action at this time (USEPA 2021).

Solar Facility

Construction

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

The construction of the project would result in the temporary generation of emissions associated with various activities, including site preparation, grading, trenching, construction of roads, and installation of collector lines, electrical infrastructure, substations, energy storage systems, solar array modules, and the O&M building. Emissions of fugitive dust would primarily be associated with ground-disturbing activities (e.g., site preparation, grading, trenching, etc.) and vehicle travel on unpaved surfaces. Emissions of ozone-precursor pollutants (ROG and NO_x) would largely be associated with off-road equipment use, and on-road vehicle operations associated with workers commuting to and from the project and haul truck trips. On-site vehicle parking areas for workers would be designated in areas that minimize vehicle travel distances, such as laydown areas located nearest the site access road and/or areas of primary construction activity. In addition, on-site worker trips would be limited to necessary activities only. Construction of the collector lines would involve linear development such that construction at any given point along the collector line routes would occur for a brief period of time. Therefore, emissions associated with the collector lines are incorporated directly into the impacts associated with construction of the solar facility.

Estimated construction emissions for 2021 and 2022 are summarized in Table 4.3-4, *Maximum Annual Construction Criteria Emissions*. As shown, construction emissions for 2021 and 2022 would not exceed EKAPCD significance thresholds. Emissions that do not exceed EKAPCD-recommended significance thresholds would be considered to have a less than significant impact and would therefore not conflict with implementation of applicable air quality plans.

Although impacts are less than significant, to further reduce impacts, Mitigation Measures MM 4.3-1KC through MM 4.3-4KC and MM 4.3-1CC through MM 4.3-4CC would be implemented to further reduce emissions.

Table 4.3-4. Maximum Annual Construction Criteria Emissions

Year	Construction Emissions (tons per year)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2021	0.8	6.1	5.7	0.02	2.3	0.9
2022	3.4	23.8	27.9	0.09	4.4	1.9
EKAPCD Thresholds	25	25	N/A	27	15	N/A
Significant Impact?	No	No	N/A	No	No	N/A
Source: Stantec 2021a (see Appendix C-1).						
Notes: CO = carbon monoxide; NO _x = nitrogen oxide; SO ₂ = sulfur dioxide; PM _{2.5} = particulate matter less than 2.5 micrometers; PM ₁₀ = particulate matter less than 10 micrometers; ROG = reactive organic gases						

Operations

Consistency with air quality plans is typically conducted based on a comparison of project-generated growth in employment, population, and vehicle miles traveled (VMT) within the region, which is used for development of the emissions inventories contained in the air quality plans. In addition, as noted above, projects that exceed applicable project-level CEQA significance thresholds would also be considered to

have a potentially significant cumulative impact to regional air quality, which could interfere with regional air quality attainment and maintenance planning efforts.

While the project would contribute to energy supply, which is one factor of population growth, the development of power infrastructure is a response to increased market demand and statewide regulatory mandates, including the RPS mandate, and is not a factor that induces new growth. Kern County planning documents already permit and anticipate a certain level of growth in the area of the project along with attendant growth in energy demand. The project would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth.

CalEEMod was used to estimate the operational emission associated with the project. Long-term increases in operational emission of criteria are shown in Table 4.3-5, *Project Operational Emissions*. Long-term operational emissions would be generated from vehicle trips associated with routine maintenance and monitoring activities at the project site, and occasional landscaping equipment use. Long-term increases in operational emissions of the ozone-precursor pollutants ROG and NO_x would equate to approximately 0.0136 tons per year or 0.1115 pounds per day and 0.0381 tons per year or 0.3123 pounds per day, respectively. These emission increases would be negligible and would not exceed applicable significance thresholds of 25 tons per year or 137 pounds per day for each pollutant. Furthermore, increases in operational emissions would likely be more than offset by displaced emissions from electricity generation. Although impacts are less than significant, to further reduce impacts, Mitigation Measures MM 4.3-4KC and MM 4.3-4CC would be implemented during operations to further reduce emissions.

Table 4.3-5. Project Operational Emissions

Year	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Annual Operational Emissions (tons/year)	0.0136	0.0381	0.3734	0.002	0.1664	0.0448
Kern County Thresholds	25	25	N/A	27	15	N/A
Significant Impact?	No	No	N/A	No	No	N/A
Daily Operational Emissions ¹ (pounds/day)	0.1115	0.3123	3.0607	0.0164	1.3639	0.3672
EKAPCD Thresholds	137	137	N/A	N/A	N/A	N/A
Significant Impact?	No	No	N/A	N/A	N/A	N/A
Source: Stantec 2021a (see Appendix C-1).						
Notes: CO = carbon monoxide; NO _x = nitrogen oxide; SO ₂ = sulfur dioxide; PM _{2.5} = particulate matter less than 2.5 micrometers; PM ₁₀ = particulate matter less than 10 micrometers; ROG = reactive organic gases						
¹ Annualized at 244 working days per year						

Although displaced emissions may occur outside the air basin, operational emissions occurring within the basin would not exceed the EKAPCD-recommended significance thresholds. For these reasons, long-term operation of the project would not conflict with implementation of applicable air quality plans.

Decommissioning

At the end of the project's useful life (anticipated to be 30 to 40 years), the solar facility would be repowered or decommissioned. The PV arrays and supporting equipment largely sit on the surface of the land, and removal of the arrays would cause minimal alteration from its natural state, nor would extensive ground-disturbing activities be required. Any other activities required for deconstruction of the on-site facilities would require similar types and levels of equipment as those used during the construction phase. Therefore, decommissioning activities at the project site would not generate emissions exceeding established EKAPCD thresholds. Although impacts are less than significant, to further reduce impacts, Mitigation

Measures MM 4.3-1KC through MM 4.3-4KC and MM 4.3-1CC through MM 4.3-4CC would be implemented to further reduce emissions. Implementation of these mitigation measures would reduce fugitive dust emissions generated during decommission activities such that the 15 tons/year threshold would not be exceeded. No other criteria air pollutant (ROG, NO_x, or SO_x) thresholds would be exceeded during decommissioning regardless of whether decommissioning of all parcels occurred consecutively or simultaneously.

Furthermore, the project applicant would be required to develop a Decommissioning Plan for review and approval by the Kern County Planning and Natural Resources Department and California City Community Development Department. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and be conducted in accordance with all applicable federal, state, and county regulations. Additionally, recommendations related to the decommissioning of utility sized solar facilities are included as a requirement of all proposed solar projects in Kern County to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. Therefore, impacts would be less than significant.

Consistency with Air Quality Management Plan

Construction, operations and maintenance, and decommissioning of the project would result in emissions of criteria pollutants including ozone precursors, such as ROG and NO_x as well as particulate matter. The EKAPCD has prepared air quality attainment plans to achieve federal ozone standards, the most recent of which is the *2017 Ozone Attainment Plan for the 2008 Federal 75 ppb 8-Hour Ozone Standard*. The EKAPCD is unclassifiable/in attainment for CO, PM₁₀, PM_{2.5}, lead, and the one-hour ozone NAAQS standards, so there are no attainment plans for those pollutants. As previously mentioned, PM_{2.5} and PM₁₀ attainment strategies in Eastern Kern County are subdivided into the IWV area, the KR/CV area, and the rest of the EKAPCD area. The project is not located in either the IWV or KR/CV area and is in the unclassified/attainment area of the EKAPCD. Therefore, the project site is not under jurisdiction of any PM_{2.5} and PM₁₀ attainment plans.

Although the project is located in an area that is attainment for NAAQS standards, the area is considered in nonattainment for the CAAQS for 1-hour ozone, 8-hour ozone and PM₁₀. Air quality impacts are further controlled locally through and provisions of EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The EKAPCD has determined that projects with emissions above the thresholds of significance for criteria pollutants would conflict with/obstruct implementation of the EKAPCD's air quality plan (EKAPCD 2006). As discussed above under construction impacts, emissions of ozone precursors ROG and NO_x would not exceed the project-level significance thresholds and therefore would not conflict with implementation of existing air quality plans. Emissions during construction would not exceed the EKAPCD threshold. Additionally, because project construction would disturb over 10 contiguous acres of surface area, implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-1CC would be required to be compliant with to be EKAPCD's rules and regulation, such as Rule 201 (Permits Required) and Rule 402 (Fugitive Dust). Implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-1CC would further reduce PM₁₀ emissions and PM₁₀ would not exceed EKAPCD or County fugitive dust thresholds and therefore would not conflict with the EKAPCD's air quality plan. Therefore, this impact would be less than significant.

Mitigation Measures

Kern County

MM 4.3-1KC: The project operator shall ensure that construction, operation, and decommissioning of the proposed project shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. The project operator shall develop a fugitive dust control plan (Plan) for the project. The Plan shall address short-term construction and long-term operational activities. The Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to the start of any earthmoving activity. The project operator shall also develop a decommissioning fugitive dust control plan (Decommissioning Plan) for the project if a decision is made to decommission and remove the solar facilities in the future. The Decommissioning Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to any decommissioning activities.

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. 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 three times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative.
 2. All disturbed areas on the project site and proposed transmission corridor shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods. The frequency of watering can be reduced or eliminated during period of precipitation.
 3. All unpaved construction and operation/maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent.
 4. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures or neighboring property, or as identified in a plan approved by the Eastern Kern Air Pollution Control District.
 5. All trucks entering or leaving the project site shall cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of six inches.

6. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
 7. Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
 8. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
 9. Prior to construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed where appropriate.
 10. Where acceptable to the Kern County Fire Department, weed control shall be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering.
- b. After clearing, grading, earth moving and/or excavating is completed within any portion of the project site, the following dust control practices shall be implemented:
1. Once initial leveling has ceased, all inactive soil areas within the construction site shall be immediately treated with a dust palliative.
 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.
 3. All unpaved road areas shall be treated with a dust palliative or graveled to prevent excessive dust.
- c. During all phases of construction, the following vehicular control measures shall be implemented:
1. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
 2. Visible speed limit signs shall be posted at the project site entrance(s).
 3. All areas with vehicle traffic, especially the main entrance roadway to the project site, shall be graveled or treated with dust palliatives so as to prevent track-out onto public roadways.
 4. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

5. Streets adjacent to the project site shall be kept clean and project related accumulated silt shall be removed on a regular basis. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited.
6. Access to the project site shall be by means of an apron into the facility site from adjoining surfaced roadways. The apron 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 facility site, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.

MM 4.3-2KC: The project operator and/or its contractor(s) shall implement the following measures during construction of the proposed project on the project site:

- a. All equipment shall be maintained in accordance with the manufacturer's specifications.
- b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- c. No individual piece of construction equipment shall operate no longer than eight cumulative hours per day.
- d. Electric equipment shall be used whenever feasible 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 if permitted under manufacturer's guidelines.

MM 4.3-3KC: The project operator shall continuously comply with the following measures during construction and operation to control NOx emissions from on-road heavy-duty diesel haul vehicles that are contracted on a continuing basis for use to haul equipment and materials for the proposed project:

- a. 2006 engines or pre-2006 engines with California Air Resources Board certified Level 3 diesel emission controls will be used to the extent possible.
- b. All on-road construction vehicles, except those meeting the 2006/California Air Resources Board certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards to the greatest extent possible. This does not apply to worker personal vehicles.
- c. The construction contractor shall ensure that all on-road construction vehicles are properly tuned and maintained in accordance with the manufacturer's specifications.

- MM 4.3-4KC:** The project operator shall continuously comply with the following measures during operation to control fugitive dust emissions:
- a. The unpaved main access road for employees and deliveries to the maintenance complex 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 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 site 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 10 miles per hour, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s) from the central maintenance complex.

City of California City

- MM 4.3-1CC:** The project operator shall ensure that construction, operation, and decommissioning of the proposed project shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. The project operator shall develop a fugitive dust control plan (Plan) for the project. The Plan shall address short-term construction and long-term operational activities. The Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to the start of any earthmoving activity. The project operator shall also develop a decommissioning fugitive dust control plan (Decommissioning Plan) for the project if a decision is made to decommission and remove the solar facilities in the future. The Decommissioning Plan shall be endorsed by the Eastern Kern Air Pollution Control District prior to any decommissioning activities.

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. The following dust control measures shall be implemented during land preparation, excavation, and/or demolition:
 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 three times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative.
 2. All disturbed areas on the project site and proposed transmission corridor shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods. The

frequency of watering can be reduced or eliminated during period of precipitation.

3. All unpaved construction and operation/maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent.
 4. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures or neighboring property, or as identified in a plan approved by the Eastern Kern Air Pollution Control District.
 5. All trucks entering or leaving the project site shall cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of six inches.
 6. Areas disturbed by clearing, earth-moving, or excavation activities shall be minimized at all times.
 7. Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
 8. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
 9. Prior to construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed where appropriate.
 10. Where acceptable to the California City Fire Department, weed control shall be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering.
- b. After clearing, grading, earth moving and/or excavating is completed within any portion of the project site, the following dust control practices shall be implemented:
1. Once initial leveling has ceased, all inactive soil areas within the construction site shall be immediately treated with a dust palliative.
 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.
 3. All unpaved road areas shall be treated with a dust palliative or graveled to prevent excessive dust.
- c. During all phases of construction, the following vehicular control measures shall be implemented:

1. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
2. Visible speed limit signs shall be posted at the project site entrance(s).
3. All areas with vehicle traffic, especially the main entrance roadway to the project site, shall be graveled or treated with dust palliatives so as to prevent track-out onto public roadways.
4. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
5. Streets adjacent to the project site shall be kept clean and project related accumulated silt shall be removed on a regular basis. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited.
6. Access to the project site shall be by means of an apron into the facility site from adjoining surfaced roadways. The apron 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 facility site, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.

MM 4.3-2CC: The project operator and/or its contractor(s) shall implement the following measures during construction of the proposed project on the project site:

- a. All equipment shall be maintained in accordance with the manufacturer's specifications.
- b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- c. No individual piece of construction equipment shall operate no longer than eight cumulative hours per day.
- d. Electric equipment shall be used whenever feasible 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 NO_x emissions.
- f. On-road and off-road diesel equipment shall use diesel particulate filters if permitted under manufacturer's guidelines.

MM 4.3-3CC: The project operator shall continuously comply with the following measures during construction and operation to control NO_x emissions from on-road heavy-duty diesel

haul vehicles that are contracted on a continuing basis for use to haul equipment and materials for the proposed project:

- a. 2006 engines or pre-2006 engines with California Air Resources Board certified Level 3 diesel emission controls will be used to the extent possible.
- b. All on-road construction vehicles, except those meeting the 2006/California Air Resources Board certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards to the greatest extent possible. This does not apply to worker personal vehicles.
- c. The construction contractor shall ensure that all on-road construction vehicles are properly tuned and maintained in accordance with the manufacturer's specifications.

MM 4.3-4CC: The project operator shall continuously comply with the following measures during operation to control fugitive dust emissions:

- a. The unpaved main access road for employees and deliveries to the maintenance complex 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 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 site 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 10 miles per hour, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s) from the central maintenance complex.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-4KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.3-1CC through MM 4.3-4CC, impacts would be less than significant.

Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include preexisting 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 due to the increased susceptibility of children, elderly people, and the infirm to respiratory distress and other air quality-related health problems than the general public.

As detailed in the sensitive receptors discussion under Section 4.3.2, *Environmental Setting*, the nearest residences in Kern County (in the community of Fremont) are located approximately 1,200 feet from the western project parcels (Site 1) and the nearest residences in California City are located approximately 3,300 feet from the southernmost project parcel. Some of the proposed routes for the collector lines would run adjacent to noise-sensitive receivers in a single-family residential neighborhood north of Phillips Road. Refer to Figure 4.12-5, *Nearest Sensitive Receptors*, showing the locations of these residences.

Implementation of the project would not result in the long-term operation of any emission sources that would adversely affect nearby sensitive receptors. However, short-term construction activities could result in temporary increases in pollutant concentrations that could affect sensitive receptors. Pollutants of primary concern commonly associated with construction-related activities include TACs (i.e., DPM), asbestos, and fugitive dust. Within the project area, the potential for increased occurrences of Valley Fever is also of concern.

Toxic Air Contaminants

As noted above, implementation of the project would not result in the long-term operation of any major on-site stationary sources of TACs. However, construction of the project may result in temporary increases in emissions of DPM associated with the use of off-road diesel equipment. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a long-term (e.g., 70- year) period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Construction activities would occur over an approximate 18- to 24-month construction period, which would constitute approximately 2 percent of the typical 70-year exposure period. In addition, the nearest receptors are approximately 0.4 mile from the project site. For these reasons and given the relatively high dispersive properties of DPM, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 10 in one million).

Operation Localized Health Impacts from Regional Emissions

Impacts of criteria pollutant emissions are evaluated on a regional level with current environmental models designed for such analysis. Current environmental science models are not designed to be able to convert specific project emission levels of criteria pollutants emitted in a particular area to a localized human health impact. As such, a qualitative discussion of the adverse health effect resulting from the project-level criteria pollutants is all that can be feasibly provided at this time.

As previously discussed, the criteria air pollutant standards developed by the state are based on levels of air quality that are deemed necessary, with an adequate margin of safety, to protect public health. The EKAPCD and Kern County have established quantitative daily and annual thresholds for criteria pollutant emissions to enforce and meet these standards on a regional level. As such, projects that do not exceed the EKAPCD's daily operational significance thresholds and meet the EKAPCD's land use criteria for project operation would not have a significant impact on regional air quality and, likewise, resulting human health impacts related to criteria pollutants would be less than significant. As discussed in Impact 4.3-1, criteria pollutant emissions generated from operations at the project site would not exceed EKAPCD thresholds for

any criteria pollutant. Emissions of ozone precursors ROG and NO_x would not exceed the project-level significance thresholds. Further, criteria pollutant emissions generated from project operation would be below the EKAPCD significance threshold by an order of magnitude or more. As such, it is not expected that project operations would result in a substantial increase in criteria pollutant concentration, regionally or locally. Therefore, related health effects 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 CEQA “does not mandate” that EIRs include “an in-depth risk assessment” that provides “a detailed comprehensive analysis to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure.” *Id.* at 1665. However, correlating the project’s criteria air pollutant to specific health impacts, particularly with respect to O₃, is not possible because there is no feasible or established scientific method to perform such analysis. This conclusion is supported by both the SJVAPCD and the SCAQMD, which have determined that this type of analysis is speculative and infeasible; 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. 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. 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.” Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and “[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved.” (SJVAPCD 2015).

This inability to “accurately ascertain local increases in concentration” of mass emissions and then to further link emissions with health effects is particularly true for O₃ and its precursors NO_x and ROG and VOC; O₃ is not directly emitted into the air, but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD 2015). Given the complex nature of this process, and the fact that O₃ can be transported by wind over long distances, “a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area” (SJVAPCD

2015). For this reason, the photochemical analysis for O₃ is done on a regional scale and it is inappropriate to analyze O₃ impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (*CEQA Guidelines* Section 15145; *Laurel Heights Improvement Association V. Regents of the University of California 1988*).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O₃ or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD 2015). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O₃ and particulates, it would still be “impossible, using today’s models, to correlate that increase in concentration to a specific health impact.” The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine “whether and to what extent emissions from an individual project directly impact human health in a particular area” (SJVAPCD 2015). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in *Sierra Club*, made similar points, reiterating that “an agency should not be required to perform analyses that do not produce reliable or meaningful results” (SCAQMD 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O₃, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to *all* regional increases. 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 Appendices C-2 and C-3, respectively, of this EIR.

Ambient Air Quality Standards

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 EKAPCD, 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 EKAPCD is designated under the NAAQS as attainment for O₃ (1 hour), PM₁₀, and PM_{2.5} and nonattainment for O₃ (8 hours), and under the CAAQS as nonattainment for O₃, PM₁₀, and unclassified for PM_{2.5}.

Project Health Effects of Criteria Air Pollutants

A 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 DPM in the environment.

Aside from DPM, heavy-duty vehicle operations and construction equipment during the grading and building phases of construction can produce substantial amounts of criteria air pollutants, primarily precursor ozone pollutants (ROG and NO_x), CO, NO₂, and particulate matter. Since none of these criteria air pollutants from project implementation would be emitted in sufficient quantity to potentially exceed both the NAAQS and CAAQS, and the emissions are considered minimal, an ambient air quality analysis was not warranted.

However, regarding health effects of criteria air pollutants, the project's potential to result in regional health effects associated with ROG, NO_x, PM₁₀, and PM_{2.5} on specific vulnerable populations cannot be calculated given existing scientific constraints. A scientific method to calculate the exact number of individuals in a vulnerable population that will get sick has not been developed, and therefore, it is assumed localized health effects associated with NO_x, PM₁₀, and PM_{2.5} emissions from project implementation could occur. The project proposes the construction and operation of a large-scale utility solar project that would require dust-generating construction activities such as pile-driving, mowing, and grading, over a large area.

Implementation of Mitigation Measures MM 4.3-1KC, MM 4.3-1CC, MM 4.3-5KC and MM 4.3-5CC would be required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints. As such, the impacts are conservatively considered to be significant and unavoidable.

Naturally Occurring Asbestos

Naturally occurring asbestos, which was identified by CARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near any areas that are likely to contain ultramafic rock. As a result, risk of exposure to asbestos during the construction phase would be considered less than significant.

Construction Fugitive Dust

During construction (site preparation and grading), fugitive dust (PM₁₀) would be generated from site grading and other earth-moving activities. The majority of this fugitive dust would remain localized and would be deposited near the project site. Mitigation Measures MM 4.3-1KC and MM 4.3-1CC require the project operator to implement dust control measures in accordance with the EKAPCD's rules and regulations. Implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-1CC would reduce potential impacts to a less than significant level.

Carbon Monoxide

Localized concentrations of CO are typically associated with the idling of vehicles, particularly in highly congested areas. For this reason, the areas of primary concern are congested roadway intersections that experience high levels of vehicle traffic with degraded levels of service (LOS). With regard to potential increases in CO concentrations that could potentially exceed applicable ambient air quality standards, signalized intersections that are projected to operate at an unacceptable LOS E or F are of particular concern.

As discussed in Section 4.14, *Transportation and Traffic*, of this EIR, nearby roadways would continue to operate at LOS C, and the two-lane highway segment would continue to operate at LOS D. As a result, the project would not be anticipated to result in or contribute to unacceptable levels of service (i.e., LOS E or

F) that would result in substantial vehicle idling and generation of idling emissions. Implementation of the proposed project would not be anticipated to result in a substantial increase in localized CO concentrations having the potential to exceed applicable ambient air quality standards. Localized concentrations of CO are, therefore, considered to be less than significant.

COVID-19

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 is still in the beginning stages. A nationwide study by Harvard University found a linkage between long-term exposure to PM_{2.5} as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard 2020). People of color may also have a higher risk of getting sick or dying from COVID-19 (California Department of Public Health 2020) and may live in areas already burdened by air pollution (NRDC 2014). On-site workers and residents near project activities potentially could be exposed to increased levels of PM_{2.5} from project activities due to the emissions of PM_{2.5} from the project.

While construction dust suppression measures would be implemented in Mitigation Measures MM 4.3-1KC and MM 4.3-1CC, exposure to dust during construction could still occur which could increase the health susceptibility and increase the severity of the disease. Several vaccines are now available for COVID-19. In addition to implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-1CC, the project would implement Mitigation Measures MM 4.3-5KC and MM 4.3-5CC, which require implementation of a COVID-19 Health and Safety Plan in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates.

Therefore, implementation of Mitigation Measures MM 4.3-1KC, MM 4.3-5KC, MM 4.3-1CC, and MM 4.3-5CC would be required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints, and there is not yet herd immunity from COVID-19. As such, the impacts are conservatively considered to be significant and unavoidable.

Valley Fever

Valley Fever is an infection caused by the fungus *Coccidioidomycosis*. *Coccidioidomycosis* spores can become airborne after contaminated soil and dust are disturbed. According to the Kern County Public Health Department's Valley Fever Website, the desert region of Kern County where the project is located has a lower incidence rate compared to the other regions of the County (Kern County Public Health Services Department 2019).

Nonetheless, during project construction, it is possible that on-site workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, dust minimizing techniques would be employed, such as maintaining natural vegetation where possible, utilizing "mow-and-roll" vegetation clearance strategy, placement of wind control fencing, application of water, and application of dust suppressants would substantially reduce potential exposure to the fungus within the soil as compared to full grading/blading of the site. Additionally, implementation of dust control measures throughout the

construction period compliant to EKAPCD rules and regulations to reduce fugitive dust emissions would also limit the exposure of both on-site workers and off-site residents.

It is possible that on-site workers could be exposed to valley fever as fugitive dust is generated during construction. Mitigation Measures MM 4.3-6KC and MM 4.3-6CC would provide training and personal protective respiratory equipment to construction workers and provide information to all construction personnel and visitors about Valley Fever, thus minimizing exposure to Valley Fever. Mitigation Measures MM 4.3-7KC and MM 4.3-7CC would require a one-time fee of \$3,200 to be paid to the Kern County Public Health Services Department Valley Fever public awareness programs. With the implementation of the mitigation measures, dust from the construction of the proposed project would not add significantly to the existing exposure level of people to this fungus, including construction workers, and impacts would be reduced to less than significant levels.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.3-1KC through MM 4.3-4KC, and;

MM 4.3-5KC: At the time of project implementation, the Kern County Public Health Services Department shall determine if the COVID-19 pandemic is still present at a level where spread to sensitive receptors could occur. If determined necessary by the Kern County Public Health Services Department, a COVID-19 Health and Safety Plan shall be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.

MM 4.3-6KC: Prior to ground disturbance activities, the project proponent shall provide a “Valley Fever Training Information Packet” and conduct training sessions for all construction personnel. A copy of the handout and a schedule of education sessions shall be provided to the Kern County Planning and Natural Resources Department. All evidence of the training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural Resources Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. 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 an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; systems of exposure; and instructions for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent symptoms lasting more than three days shall be recommended to seek immediate medical advice.

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. Though the use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to the Kern County Planning and Natural Resources Department. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.

MM 4.3-7KC: 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.

City of California City

Implement Mitigation Measures MM 4.3-1CC through MM 4.3-4CC, and:

MM 4.3-5CC: At the time of project implementation, the Kern County Public Health Services Department shall determine if the COVID-19 pandemic is still present at a level where spread to sensitive receptors could occur. If determined necessary by the Kern County Public Health Services Department, a COVID-19 Health and Safety Plan shall be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy shall be submitted to the California City Community Development Department for review and approval.

MM 4.3-6CC: Prior to ground disturbance activities, the project proponent shall provide a “Valley Fever Training Information Packet” and conduct training sessions for all construction personnel. A copy of the handout and a schedule of education sessions shall be provided to the California City Community Development Department. All evidence of the training session(s) and handout(s) shall be submitted to the California City Community Development Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The evidence submitted to the California City Community Development 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 an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; systems of exposure; and instructions for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent

symptoms lasting more than three days shall be recommended to seek immediate medical advice.

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. Though the use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to the California City Community Development Department. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.

MM 4.3-7CC: Prior to the issuance of grading permits, the California City Community Development Department shall verify that a one-time fee has been paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.

Level of Significance after Mitigation

Kern County

Even with implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM_{2.5} along with indirect linkages of criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable project-level impacts.

City of California City

Even with implementation of Mitigation Measures MM 4.3-1CC through MM 4.3-7CC, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM_{2.5}, along with indirect linkages of criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable project-level impacts.

Impact 4.3-3: The project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Land uses that commonly emit odorous compounds include dairies, agricultural uses, wastewater treatment plants, chemical plants, food processing facilities, composting, refineries, and fiberglass molding facilities. The project includes the construction and operation of a solar PV facility, which would not result in the emission of odorous compounds. According to the *2017 Ozone Attainment Plan* prepared by EKAPCD, wind direction in the MDAB travels from the northwest to southeast and then is transported north. This transport direction would help fugitive dust and odorous diesel emissions generated from construction activities move away from nearby receptors, thus reducing nuisance and annoyances. Additionally, construction activities would be temporary and would be controlled by the implementation of PM₁₀ control measures in accordance with EKAPCD Rule 402.

As a solar PV facility, the operational phase of the project would not emit any odorous compounds. Implementation of the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less significant.

City of California City

Impacts would be less significant.

Cumulative Setting, Impacts, and Mitigation Measures

With respect to cumulative air quality impacts, 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).

Impact 4.3-4: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

The project is located within the Kern County portion of the MDAB, which is an area that is designated as non-attainment for federal and State ozone standards as well as State PM₁₀ standards and is under the jurisdiction of the EKAPCD. The EKAPCD's approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and State CAAs. With respect to determining the significance of a project's contribution to regional emissions, Kern County, in its Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (Kern County 2006), states that projects that produce emissions that exceed the adopted thresholds of the EKAPCD for ROG, NO_x, and PM₁₀ shall be considered significant for a project level and/or cumulatively for impacts to air quality. Thus, based on Kern County's guidance, if an individual project results in air emissions of ROG, NO_x, and PM₁₀ that exceed the EKAPCD's thresholds

for project-specific impacts, then it would also result in a cumulatively considerable net increase of these pollutants for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. Even though the project does not exceed applicable thresholds on an individual basis, the project may contribute to a cumulatively considerable net increase in construction emissions for NO_x and PM₁₀, as discussed below. The project would not result in a cumulatively considerable net increase in operations-related criteria pollutant emissions, as discussed below.

Localized Impacts

As discussed under Impact 4.3-1 above, the criteria pollutant emissions generated during construction and operation by the project would not exceed the applicable thresholds established by the EKAPCD. As such, the project would not result in an individual air quality impact during construction and operation of the PV solar facility. However, cumulative impacts could result if the project's incremental effect combined with impacts of other past, present, and reasonably foreseeable future projects exceed the EKAPCD thresholds.

Cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned solar projects, would occur only during project construction since project operation emissions are expected to be negligible. After that, there would be minimal emissions and less than significant cumulative impacts during operation of the project.

It can be conservatively assumed that if the project and additional solar projects would develop concurrently, construction activities would not contribute emissions of criteria pollutants (due to grading activities and the use of heavy-duty diesel equipment) that would be cumulatively considerable. Therefore, it can be assumed that temporary cumulative impacts would be less than significant with respect to localized construction emissions and would not interfere with attainment of applicable air quality standards. However, given existing scientific constraints, it is not feasible to analyze health risks associated with criteria pollutant emissions and impacts from construction activities and specifically with COVID-19, which has limited research; therefore, the impacts on air quality and health for both project and cumulatively would remain significant and unavoidable even with implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC and Mitigation Measures MM 4.3-1CC through MM 4.3-7CC.

With respect to operational emissions, the concurrent operation of the project and other projects would not be anticipated to result in emissions that would be cumulatively considerable. Given the nature of solar projects, the primary source of criteria pollutant emissions would be generated during the construction phases. During operation, the only likely source of emissions for solar facilities would be limited to vehicular emissions associated with routine employee vehicle trips for maintenance and monitoring activities. Additionally, employee trips would also be made for the washing of PV surface panels, which would likely occur seasonally throughout the year. Overall, the combined operational emissions from the project and other solar projects would not exceed EKAPCD CEQA thresholds. Therefore, no significant cumulative air quality impacts would occur with respect to localized operation emissions.

Localized Health Impacts from Regional Emissions – Operations

Impacts of criteria pollutant emissions are evaluated on a regional level with current environmental models designed for such analysis. Current environmental science models are not designed to be able to convert specific project emission levels of criteria pollutants emitted in a particular area to a localized human health impact. As such, a qualitative discussion of the adverse health effects resulting from the project-level criteria pollutants is all that can be feasibly provided at this time.

As previously discussed, the criteria air pollutant standards developed by the State are based on levels of air quality that are deemed necessary, with an adequate margin of safety, to protect public health. The EKAPCD and Kern County have established quantitative daily and annual thresholds for criteria pollutant emissions to enforce and meet these standards on a regional level. As such, projects that do not exceed the EKAPCD's daily operational significance thresholds and meet the EKAPCD's land use criteria for project operation would not have a significant impact on regional air quality and, likewise, resulting human health impacts related to criteria pollutants would be less than significant. As discussed above, criteria pollutant emissions generated from operations at the project sites would not exceed EKAPCD thresholds for any criteria pollutant either at individual sites or combined emissions for the project as a whole. Emissions of ozone precursors ROG and NO_x would not exceed the project-level significance thresholds. Further criteria pollutant emissions generated from project operation would be below the EKAPCD significance threshold by an order of magnitude or more. As such, it is not expected that project operations would result in a substantial increase in criteria pollutant concentration regionally or locally. Therefore, related health effects would be less than significant.

Consistency with Existing Air Quality Plans

The Kern COG Regional Conformity Analysis Determination demonstrates that the regional transportation expenditure plans in the Kern County portion of the Mojave Desert air quality planning area will not hinder the efforts set out in CARB's SIP for the area's nonattainment pollutant (ozone). 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 City of Bakersfield, Kern County, and Kern COG.

As discussed under Impact 4.3-1 above, construction and operation of the project would not exceed any established EKAPCD emissions thresholds. During operations, the project is expected to be staffed by 20 operations personnel during normal weekday working hours. It is anticipated that these employees would be drawn from the existing Kern County population. The project would not generate population, households, or substantial employment for any of the traffic analysis zones used to determine conformity. Therefore, the project would be consistent with the adopted growth forecast and would be in conformance with the Kern COG Regional Conformity Analysis Determination.

Cumulative Toxic Air Contaminants

Combined TACs emission impacts from the project and other existing and planned projects are considered cumulatively significant when air quality standards are exceeded. Since the project would not be a significant source of TACs, it is not expected to pose a significant cumulative TAC impact. Since the majority of the projects are also solar plants, TACs would not be considered a significant impact for those projects either. Therefore, TACs impacts would not be cumulatively considerable and impacts would be less than significant.

Cumulative Carbon Monoxide (CO) – Mobile Sources

Traffic increases and added congestion caused by a project can combine to cause a CO "hot spot." No vehicular traffic other than sporadic maintenance, panel washing trucks, and employees are expected and due to the location of the site, potentially impacted intersections and roadway segments are anticipated to operate at a LOS C or better during project operations. Therefore, cumulative CO "hot spot" modeling was not conducted for this project and no concentrated excessive CO emissions are expected to be caused once

the proposed project is completed. Additionally, as the majority of the other projects are also solar plants, traffic would be minimal and would not result in CO “hot spots.” Therefore, CO impacts would not be cumulatively considerable and impacts would be less than significant.

CARB Air Basin Emissions

The inventory of air emissions in California is maintained by CARB. ROG, NO_x, and PM₁₀ emissions data for both the MDAB and the subset that is the Kern County portion of the MDAB (i.e., the area that is under the jurisdiction of the EKAPCD) was obtained from the CARB Emission Inventory database. The data for both areas were obtained for the 2018 and 2021 Estimated Annual Average Emissions. Data for the entire MDAB and the Kern County portion of the MDAB are presented in Table 4.3-6, *Total Emissions within the Mojave Desert Air Basin and the Kern County Portion of the MDAB*. Table 4.3-7, *Kudu Solar Project Emission Projections*, shows the emissions estimates for the project.

Table 4.3-6. Total Emissions within the Mojave Desert Air Basin and the Kern County Portion of the MDAB

Inventory Segment	2018 Emissions (tons/year)			2021 Emissions (tons/year)		
	ROG	NO _x	PM ₁₀	ROG	NO _x	PM ₁₀
Mojave Desert Air Basin Total Emissions	21,124.96	52,952.01	51,408.43	20,845.26	50,378.76	53,204.23
Kern County Portion of the MDAB Total Emissions	3,633.58	11,532.91	5,897.31	3,561.67	11,200.39	5,936.00

Source: CARB 2016.
Notes: NO_x = nitrogen oxide; PM₁₀ = particulate matter less than 10 micrometers; ROG = reactive organic gases

Table 4.3-7. Kudu Solar Project Emission Projections

Inventory Segment	Emissions (tons/year)		
	ROG	NO _x	PM ₁₀
Kudu Solar project (max annual emissions)	3.4	23.8	4.4
Mojave Desert Air Basin	20,845.26	50,378.76	53,204.23
Kern County Portion of MDAB	3,561.67	11,200.39	5,936.00
Kudu Solar Project Percent of MDAB	0.02%	0.05%	0.01%
Kudu Solar Project Percent of Kern Portion of MDAB	0.10%	0.21%	0.07%

Source: Stantec 2021a (see Appendix C-1).
Notes: The emission estimates for Kern County and the MDAB are based on 2021 projections. The Kudu Solar Project emission estimates are for the construction during the years of 2021-2022.
NO_x = nitrogen oxide; PM₁₀ = particulate matter less than 10 micrometers; ROG = reactive organic gases

As shown in Table 4.3-6, *Total Emissions within the Mojave Desert Air Basin and the Kern County Portion of the MDAB*, the project’s contribution to regional air emissions in Kern County and in the MDAB would be very small in terms of county- and region-wide emissions. When compliance with applicable rules such as the EKAPCD’s required emissions controls are considered, the regional contribution to the cumulative impact would be negligible.

Because cumulative construction would not result in significant emissions of NO_x and PM₁₀ for which the EKAPCD and surrounding air districts of the San Joaquin Valley and MDAB are in nonattainment (ozone, and PM₁₀), cumulative construction emissions would not result in a cumulatively considerable net increase. Because the project would not result in significant operational emissions of criteria pollutants, the project would not contribute to a long-term cumulative increase in criteria pollutants and impacts would be considered less than significant. The project could result in a positive cumulative benefit to air quality in the region as it would introduce a non-fossil fuel-based energy source.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.3-1KC through MM 4.3-4KC (refer to Impact 4.3-1) and MM 4.3-5KC through MM 4.3-7KC (refer to Impact 4.3-2).

City of California City

Implement Mitigation Measures MM 4.3-1CC through MM 4.3-4CC (refer to Impact 4.3-1) and MM 4.3-5CC through MM 4.3-7CC (refer to Impact 4.3-2).

Level of Significance after Mitigation

Kern County

Even with implementation of the noted mitigation measures, the uncertainty of the potential for adverse health impacts associated with criteria air pollutants, such as PM₁₀, including potential linkages between criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable cumulative air quality impacts.

City of California City

Even with implementation of the noted mitigation measures, the uncertainty of the potential for adverse health impacts associated with criteria air pollutants, such as PM₁₀, including potential linkages between criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable cumulative air quality impacts.

Cumulative Impacts Summary

As discussed in Section 4.3.4, *Regulatory Setting*, with mitigation, the construction emissions generated by the project individually would not exceed EKAPCD thresholds. Mitigation Measures MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC would reduce impacts related to NO_x and PM₁₀ from diesel emissions, reduce dust generation, restrict worker trips, and address potential Valley Fever risk by implementing fugitive dust control measures, establishing a public complaint protocol for excessive dust generation, and requiring Valley Fever-related training for construction workers. However, assuming on a worst-case basis that the construction schedules for all cumulative projects would overlap with each other and with the proposed project, cumulative impacts during construction could remain significant and unavoidable related to NO_x and PM₁₀ emissions.

Project operation would result in an overall net reduction of emissions by providing electricity that would displace energy produced from fossil fuels. Project operation 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.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.3-1KC through MM 4.3-7KC.

City of California City

Implement Mitigation Measures MM 4.3-1CC through MM 4.3-7CC.

Level of Significance after Mitigation

Kern County

Cumulative impacts would be less than significant during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC, due to the incremental effects of the project. Cumulative impacts related to operation would be less than significant. The uncertainty of the project's regional and localized health impacts on vulnerable populations associated with criteria air pollutants, such as PM_{2.5}, along with indirect linkages of criteria pollutants and COVID-19 could result in significant and unavoidable cumulative level impacts.

City of California City

Cumulative impacts would be less than significant during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1CC through MM4.3-7CC, due to the incremental effects of the project. Cumulative impacts related to operation would be less than significant. The uncertainty of the project's regional and localized health impacts on vulnerable populations associated with criteria air pollutants, such as PM_{2.5}, along with indirect linkages of criteria pollutants and COVID-19 could result in significant and unavoidable cumulative level impacts.

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4.4.1 Introduction

This section describes the affected environment and regulatory setting for biological resources that have been confirmed present, as well as those that have the potential to be present, on the project site. The physical and regulatory settings for the project are described, and the existing biological conditions on the project site and its vicinity are evaluated. The criteria used to evaluate the significance of potential impacts on biological resources are indicated and the methods used in evaluating these potential impacts are described. The analysis is supported by the following reports included in the Appendices of this EIR:

- *Biological Evaluation* prepared by EnviroPlus Consulting, Inc. (EPC 2020a); and
- *Kudu Solar Farm Preliminary Jurisdictional Aquatic Resources Delineation Report* prepared by Stantec (Stantec 2020d), located in Appendix D and E of this EIR, respectively, of this EIR.

In September 2019, a Mohave ground squirrel habitat assessment and vegetation community assessment were conducted. Species specific surveys for federal or state listed and special-status wildlife species were initiated in August and concluded in October of 2019. Rare plant focused surveys were initiated in March 2020 and concluded in April 2020. Focused surveys for Mohave ground squirrel were conducted in 2020, with visual surveys from March 15 to April 15; live-trapping surveys from March 15 to April 15, May 1 to 31, and June 15 to July 15; and camera trapping surveys from March 15 to July 15. Information for the *Biological Evaluation* was generated from literature searches, multi-agency databases, maps, and other documents to include a 20-mile radius around the project area power connections.

4.4.2 Environmental Setting

The project is located within southeastern Kern County. Kern County encompasses 8,161 square miles and is bordered by Monterey and King Counties to the northwest, Tulare County to the north, Inyo County to the northwest, San Bernardino County to the east, Los Angeles County to the south, Ventura County to the southwest, Santa Barbara County to the southwest, and San Luis Obispo County to the west.

The proposed project is located in portions of unincorporated Kern County and California City, north of the California City Municipal Airport, in Fremont Valley, located within the U.S. Geological Survey (USGS) 7.5-minute Mojave NE and California City North topographic quadrangles. The project includes 2,235.06 gross acres on 75 privately owned parcels in unincorporated Kern County and in California City. The solar energy facility site is located on a total of 42 parcels within Kern County and comprise 673.60 gross acres and a total of 33 parcels are located within California City and comprise 1,281.53 gross acres. In addition, the project includes collector lines in Kern County (186.36 gross acres) and California City (93.62 gross acres).

The terrain of the project site is relatively flat with elevations ranging between 2,174 feet above mean sea level (AMSL) in the northeastern portion to 2,460 feet AMSL in the southwestern portion. Drainage is

towards Koehn Dry Lake, located 10 miles to the northeast. Due to the relatively flat terrain over most of the project site, hydrology is largely characterized by percolation and small washes.

State Route (SR) 14, a generally north-south four-lane divided highway lies within 0.5 mile west of the project site. Neuralia Road, a two-lane paved County road traverses north-south through the project site while Phillips Road, a two-lane road paved County road traverses east-west through the project site. The UP Railroad, a single line track, passes through the project site in the west generally paralleling SR14.

There are existing and proposed solar farms in the vicinity of the project site. These include Springbok 1 and 2 located immediately south of the Honda Proving Center, the Beacon Solar Farm located between Springbok 1 and SR14, and Cinco Solar Farm which is located just west of SR14 about a mile west of the western-most parcels of the project. Eland 1 is a proposed solar farm immediately adjacent to and intermixed with the proposed project parcels.

Climate

The desert area around California City has an average annual temperature ranging from 48 degrees Fahrenheit (F) to 76 degrees F. The coldest month is December and average temperatures range between 32 degrees F and 58 degrees F. The warmest month is July and average temperatures range between 67 degrees F and 97 degrees F. The mean precipitation is approximately 6.5 inches. Most of the annual precipitation, in the form of rain, falls between the months of November and March.

Vegetation

The project is located in the Mojave Desert Region of the Desert Floristic Province. Landforms in the region include granite-derived flood plains, alluvial fans, and terraces. The project site supports a total of four shrubland alliances and one plant association. The following vegetation communities were identified onsite: creosote bush – white bursage scrub (*Larrea tridentata* – *Ambrosia dumosa* shrubland alliance); creosote bush – white bursage – desert senna scrub (*Larrea tridentata* – *Ambrosia dumosa* – *Senna armata* association); creosote bush scrub (*Larrea tridentata* shrubland alliance); rubber rabbitbrush scrub (*Ericameria nauseosa* shrubland alliance); white bursage scrub (*Ambrosia dumosa* shrubland alliance); and Mediterranean California naturalized annual and perennial grassland group. Table 4.4-1, *Acreage of Vegetation Communities on the Project Site*, provides the acreage of each vegetation community on the project site. As shown in Table 4.4-1, *Acreage of Vegetation Communities on the Project Site*, the largest vegetation community consists of the creosote bush-white bursage scrub (*Larrea tridentata*-*Ambrosia dumosa* shrubland alliance), comprising 48 percent of the project area. The second largest vegetation community is the rubber rabbitbrush scrub shrubland alliance, comprising 28.5 percent of the project area.

Table 4.4-1. Acreage of Vegetation Communities on the Project Site

Vegetation Community	Acres		
	Kern County Project Parcels	California City Project Parcels	Total Acres*
Creosote Bush - White Bursage Scrub (<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland Alliance)	478.87	593.17	1,072.04
Rubber Rabbitbrush Scrub (<i>Ericameria nauseosa</i> Shrubland Alliance)	56.93	579.56	636.49
Creosote Bush – White Bursage – Desert Senna Scrub (<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Senna armata</i> Association) ²	203.12	0.85	203.97
Creosote Bush Scrub (<i>Larrea tridentata</i> Shrubland Alliance)	78.81	88.42	167.23
White Bursage Scrub (<i>Ambrosia dumosa</i> Shrubland Alliance)	18.05	112.06	130.11
Mediterranean California Naturalized Annual and Perennial Grassland Group	10.10	--	10.10
Unvegetated (developed: paved roadways, structures, or other features and disturbed: dirt roadways)	14.00	1.12	15.12
Total Acres	859.88	1,375.18	2,235.06
Note: * = Total acreage includes solar energy facility site and collector lines Source: EPC 2020a; see Appendix D. of this EIR ² Sensitive Natural Community (CDFW 2019)			

Sensitive Natural Communities

Sensitive natural communities are designated by the California Department of Fish and Wildlife (CDFW), or occasionally in local policies and regulations, and these communities are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent and/or distribution. These communities are considered threatened enough to warrant some level of protection. For example, federal, State, and most local agencies consider wetlands and riparian habitat as sensitive communities. Of the vegetation communities identified on this project site, the *Larrea tridentata* – *Ambrosia dumosa* – *Senna armata* association is considered by the CDFW to be a sensitive natural community. This sensitive natural community is depicted on Figure 5 in Appendix C of this EIR and described in more detail below.

***Larrea tridentata* – *Ambrosia dumosa* – *Senna armata*) Association (Creosote Bush – White Bursage – Desert Senna Scrub)**

Of the six vegetation communities present on the project site, the creosote bush – white bursage – desert senna scrub association is designated as a sensitive natural community by CDFW. This plant association, under the *Larrea tridentata*-*Ambrosia dumosa* Shrubland Alliance, is limited to areas along the UP Railroad, which traverses the western portion of the project site, and in a small patch located in the southernmost collector line in California City. Soils in these areas consisted of sands, coarse sands, and gravels. Other shrubs included goldenhead, cheesebush, winter fat, desert tomato, and box-thorn.[If not already mentioned earlier, these need the scientific names behind each common name]. Scattered young Western Joshua trees are also present within this sensitive plant association.

Special-Status Species

Special-status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or local agencies as being under threat from development pressures as well as natural causes. Some of these species receive specific protection that is defined by the federal or state Endangered Species Acts (FESA, CESA). 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 Plant Species

Based on the literature review, a total of 34 special-status plant species have been identified within the USGS quadrangles in and around the project site. There were no records of any special-status plants within or immediately adjacent to the project site. Based on habitat requirements and elevational range, 19 species were identified as having no potential of occurring in the project site. The remaining 15 species have some potential of occurring and include one state candidate species for listing as threatened; six species that are listed as California Native Plant Society (CNPS) Rank 1B, defined as plants that are rare and endangered in California and elsewhere; and eight species that are listed as CNPS Rank 4, a watch list of plants with limited distribution. No potentially occurring species are listed as “threatened” or “endangered” under FESA or CESA. Table 4.4-2, *Special-Status Plant Species with Potential to Occur in the Project Area*, identifies the regulatory status, habitat requirements, and blooming period for each plant species, as well as the potential for the species to occur on the project site. A detailed description of special-status plant species that have the potential to occur on the project site is provided in the *Biological Evaluation* located in Appendix D-1 of this EIR.

Table 4.4-2. Special-Status Plant Species with Potential to Occur in the Project Area

Plant Species	Rank or Status	Habitat and Distribution Notes	Potential for Occurrence
Desert cymopterus (<i>Cymopterus deserticola</i>)	Federal: -- State: -- CNPS: 1B.2E	Flowering: March – May. 630-1500 m. Sandy. Western Joshua tree woodland, Mojavean desert scrub. Known to occur northwest (west of Red Rock Canyon State Park) and southeast (Edwards AFB and Aerial Acres) of the project.	Low. May occur on the sandy hummocks east of Neuralia Road.
Barstow woolly sunflower (<i>Eriophyllum mohavense</i>)	Federal: -- State: -- CNPS: 1B.2E	Flowering: March – May. 500-950 m. Gravelly, silty, sandy, or clay soils on level or sloping terrain, as well as in low-lying areas. Chenopod scrub, Mojavean scrub, playas. Known to occur east and south of the project at the DTRNA and at the Hyundai Proving Grounds.	Low. May occur in silty and gravelly depressions east of Neuralia Road.
Red Rock poppy (<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i>)	Federal: -- State: -- CNPS: 1B.2E	Flowering: March – May. 680-1230 m. Rhyolite tuff, granitic. Mohavean desert scrub. Known to occur north and northeast of the project in the El Paso Mountains.	Low. May occur in gravelly areas on undisturbed parcels throughout the project site.

Table 4.4 2. Special-Status Plant Species with Potential to Occur in the Project Area, continued

Plant Species	Rank or Status	Habitat and Distribution Notes	Potential for Occurrence
Pale-yellow layia (<i>Layia heterotrichia</i>)	Federal: -- State: -- CNPS: 1B.1E	Flowering March – June. 300-1705 m. Alkaline or clay. Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Known to occur southwest of the project near Mojave.	Low. May occur in silty or clayey areas on undisturbed parcels.
Creamy Blazing Star (<i>Mentzelia tridentata</i>)	Federal: -- State: -- CNPS: 1B.3E	Flowering: March – May. 700-1175 m. Rocky, gravelly, sandy. Mojavean desert scrub. Known to occur east and north of the project in central Mojave Desert and upper Red Rock Canyon (old, vague record).	Low. May occur on undisturbed parcels throughout the project site.
Charlotte’s phacelia (<i>Phacelia nashiana</i>)	Federal: -- State: -- CNPS: 1B.2E	Flowering: March – June. 600-2200 m. Usually granitic, sandy or rocky areas on steep slopes or flats. Western Joshua tree woodland, Mohavean desert scrub; pinyon-juniper woodland; Known to occur north and west of the project in Red Rock Canyon, Jawbone Canyon, and Pine Tree Canyon.	Low. May occur in the extreme western portion of the project site.
Kern County evening-primrose (<i>Camissonia kernensis</i> ssp. <i>kernensis</i>)	Federal: -- State: -- CNPS: 4.3E	Flowering: March – May. 790-2130 m. Sandy or gravelly, granitic. Chaparral, Western Joshua tree woodland, pinyon and juniper woodland. Known to occur northwest and southwest of the project.	Low. May occur in sandy and gravelly soils on undisturbed parcels throughout the project site.
White pygmy-poppy (<i>Canbya candida</i>)	Federal: -- State: -- CNPS: 4.2E	Flowering: March – June. 600-1460 m. Gravelly, sandy, granitic. Western Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Known from the West Mojave Desert.	Moderate. May occur in sandy and gravelly soils on undisturbed parcels throughout the project site.
Mojave spineflower (<i>Chorizanthe spinosa</i>)	Federal: -- State: -- CNPS: 4.2E	Flowering: March – July. Sometimes alkaline. Chenopod scrub, Western Joshua tree woodland, Mojavean desert scrub, playas. Known to occur in surrounding areas.	Low. May occur in silty, clayey, or gravelly open areas on undisturbed parcels.
Death Valley Sandmat (<i>Euphorbia vallis-mortae</i>)	Federal: -- State: -- CNPS: 4.2E	Flowering: March – October. Sandy, gravelly. Mojavean desert scrub. Known to occur north and northwest of the project.	Low. May occur in sandy and gravelly soils on undisturbed parcels throughout the project site.

Table 4.4 2. Special-Status Plant Species with Potential to Occur in the Project Area, continued

Plant Species	Rank or Status	Habitat and Distribution Notes	Potential for Occurrence
Golden goodmania (<i>Goodmania lutelo</i>)	Federal: -- State: -- CNPS: 4.2	Flowering: April – August. 20-2200 m. Alkaline or clay. Mojavean desert scrub, meadows and seeps, playas, valley and foothill grassland. Known from south and southeast of the project.	Low. May occur in silty or clayey open areas on undisturbed parcels.
Solitary blazing star (<i>Mentzelia eremophila</i>)	Federal: -- State: -- CNPS: 4.2	Flowering: March – May. 700-1220 m. Canyons, rocky slopes, washes. Mojavean desert scrub. Known to occur in surrounding areas.	Low. May occur in small washes on the project site.
Crowned muilla (<i>Muilla coronata</i>)	Federal: -- State: -- CNPS: 4.2	Flowering: March – April. 670-1960 m. Chenopod scrub, Western Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Known to occur near the project.	High. Potential habitat occurs on undisturbed parcels throughout the project site; known location nearby.
Mojave fish-hook cactus (<i>Sclerocactus polyancistrus</i>)	Federal: -- State: -- CNPS: 4.3E	Flowering: April – May. 640-2320 m. Usually carbonate. Great Basin scrub, Western Joshua tree woodland, Mojavean desert scrub. Known to occur in surrounding areas.	Low. May occur on undisturbed parcels throughout the project site.
Notes: CNPS ranks: 1B=plants rare and endangered in California and elsewhere; 4=plants of limited distribution – a watch list. The number following Rank is the Threat Code: .1=seriously endangered in CA; .2=fairly endangered in CA; .3=not very endangered in CA. Plants with an “E” are endemic to California. Source: Appendix D of this EIR			

In addition, taxa protected under the California Desert Native Plants Act (CDNPA; Division 23 of the California Food and Agricultural Code, Section 80071-80075) (California Food and Agricultural Code 2005) were also considered. Plants protected by the CDNPA that may occur within the project site include golden cholla (*Cylindropuntia echinocarpa*), beavertail cactus (*Opuntia basilaris* var. *basilaris*), and Western Joshua tree. These plant species are all common and widespread throughout the West Mojave Desert. Western Joshua trees occur mainly in the western portion of the project. Golden cholla and beavertail cactus are expected to occur infrequently throughout the area.

Western Joshua Tree

Western Joshua trees are protected under the CDNPA. The Western Joshua tree is also a protected desert native plant species pursuant to Kern County’s Department of Agriculture and Measurement Standards. Harvesting, cutting, and salvaging of Western Joshua trees in Kern County may only be completed under an approved permit.

On October 15, 2019, the California Fish and Game Commission (CFGF) received a petition to list the Western Joshua tree as threatened under the CESA (CBD 2019). In February 2020, CDFW completed a review of the petition, as well as other scientific information available to CDFW. In its review, CDFW determined that “the petition provides sufficient scientific information to indicate that the petitioned action may be warranted” (CDFW 2020). On September 22, 2020, the CFGF accepted for consideration the

petition to list the Western Joshua tree as threatened or endangered under the CESA and made the Western Joshua tree a candidate species (CFGF 2020a). Subsequently, the CFGF adopted a regulation authorizing incidental take of Western Joshua tree during the candidacy period pursuant to Section 2084 of the California Fish and Game Code for certain energy projects in Kern and San Bernardino Counties listed in the regulation (the “2084 Rule”). The Kudu Solar Project is one of the projects listed in the 2084 Rule. This conditional incidental take authorization is codified in California Code of Regulations (CCR) Title 14, Section 749.10 (CFGF 2020b). As noted below, under Rare Plant Survey, a total of five Western Joshua trees were found in the westernmost part of the project site, within Kern County.

Rare Plant Survey

A protocol-level rare plant survey was conducted in March and April 2020 by EREMICO Biological Services, LLC and Mark Bagley Consulting Biologist for the proposed project. The purpose of the survey was to determine the occurrence of special-status plant species and plants protected under the CDNPA on the project site. Two special-status plant species (Barstow woolly sunflower [*Eriophyllum mohavense*], CNPS Rank 1B and Mojave spineflower [*Chorizanthe spinosa*], CNPS Rank 4, and two species protected under the CDNPA (Western Joshua tree [*Yucca brevifolia*] and silver cholla [*Cylindropuntia echinocarpa*]) were observed. It should also be noted that crowned muilla (*Muilla coronata*, a CNPS Rank 4 species, had high probability of occurring in the project site, particularly on Kern County parcels east of Neuralia Road. However, the species may have been overlooked during the surveys because of its diminutive stature and obscure appearance when only in fruit.

Barstow woolly sunflowers were recorded at one location east of Neuralia Road in California City (APN 302-322-06). Twenty-eight individuals were observed in an approximately one square meter area on a small silt-clay pan in an open area with very few shrubs. Soils consisted of silty clay loam with a thin gravel surface of decomposed granite. The only other annual species at this site were red-stemmed filaree (*Erodium cicutarium*) and narrow-toothed pectocarya (*Pectocarya linearis* ssp. *ferocula*). The habitat in the surrounding area was creosote bush scrub with no other shrub species.

An estimated 900 Mojave spineflowers were recorded at eight locations in the southeastern portion of the project site, east of Neuralia Road in California City. The population area totaled approximately 195 square meters. The species was typically observed in open flats with silty loam or silty clay loam soil and gravel or scattered pebbles on the surface. The habitat at all locations was creosote bush scrub with no other shrubs. Common annuals in these areas included red-stemmed filaree, little desert trumpet (*Eriogonum trichopes*), narrow-toothed pectocarya, and common goldfields (*Lasthenia gracilis*).

Western Joshua trees were observed in the westernmost portion of the project site in Kern County. One Western Joshua tree less than two feet tall was observed and four Western Joshua trees approximately two to eight feet tall were observed.

Silver chollas were observed predominantly in the northern and westernmost portions of the project site in Kern County as well as the southeastern portion of the project site in California City. In total, 736 silver chollas were recorded in Kern County and 15 silver chollas were recorded in California City.

Special-Status Wildlife Species

The literature review conducted for listed and special-status wildlife species identified a total of 21 species within the USGS quadrangles in and around the project site. Out of the 21 species identified, 17 species

have the potential to occur within the project site. In addition to the 2019 California Natural Diversity Database (CNDDDB) list, 13 more species were identified with a potential for occurring in or near the project, increasing the total to 30 species. Of the 30 species, six are federal and/or state listed. Of these six species, only two have the potential to inhabit the project site: the state-listed “threatened” Mohave ground squirrel (*Xerospermophilus mohavensis*; MGS) and the federal and state-listed “threatened” desert tortoise (*Gopherus agassizii*; DT). The following are species that are not known to nest within the limits of the project but may potentially occur on site to forage, hunt, roost, perch, drink, or migrate through: federal and state-listed “endangered” California condor (*Gymnogyps californianus*), state-listed “threatened” Swainson’s hawk (*Buteo swainsoni*), and state-listed “threatened” tricolored blackbird (*Agelaius tricolor*). Table 4.4-3, *Special-Status Wildlife Species with the Potential to Occur in the Project Area*, summarizes the special-status species, their habitat requirements and their potential for occurrence in the project area. Of the 30 special-status wildlife species, 14 species have a moderate or high potential of occurring in the project area. The following five species have been determined to not have potential for occurrence in the project area and are not included in Table 4.4-3, *Special-Status Wildlife Species with the Potential to Occur in the Project Area*: western snowy plover (*Charadrius alexandrinus nivosus*), mountain plover (*Charadrius montanus*), gray vireo (*Vireo vicinior*), Bendire’s thrasher (*Toxostoma bendirei*), and crissal thrasher (*Toxostoma crissale*).

A detailed description of the special-status wildlife species identified with a potential for occurring in or near the project area is provided in the *Biological Evaluation* located in Appendix D of this EIR.

Table 4.4-3. Special-Status Wildlife Species with the Potential to Occur in the Project Area

Species	Rank or Status ¹	Habitat Requirements	Potential for Occurrence
Invertebrates²			
Crotch bumble bee (<i>Bombus crotchii</i>)	Federal: -- State: CS	Statewide distribution in a variety of habitats and agricultural fields. Wet years with wildflower bloom.	Very Low. Not expected in dry years. Occurrences recorded in the region.
Western bumble bee (<i>Bombus occidentalis</i>)	Federal: -- State: CS	Limited to agricultural lands and maybe other habitat types.	Very Low. Not expected on site. Occurrences recorded in the Fremont Valley region.
Reptiles			
Desert tortoise (<i>Gopherus agassizii</i>)	Federal: FT State: ST	Wide variety of desert habitats: alluvial fans, washes, canyons, and saltbush plains. Creosote bush scrub on alluvial fans and bajadas. Friable soils for excavating burrows.	Moderate to High. Appropriate habitat and nearby known occurrences.
Birds			
Cooper’s hawk (<i>Accipiter cooperii</i>)	Federal: -- State: WL	Summer migrant; variety of desert habitats and nest in deciduous trees preferably near water sources.	Low to Moderate. Appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby; known occurrences within the project limits.

Table 4.4 3. Special-Status Wildlife Species with the Potential to Occur in the Project Area, continued

Species	Rank or Status ¹	Habitat Requirements	Potential for Occurrence
Tricolored blackbird (<i>Agelaius tricolor</i>)	Federal: SC, BCC State: ST	Summer migrant and local colonial breeder in freshwater habitats: marshes with dense stands of cattails or bulrushes, agricultural fields and dairy farms. Forge in farm fields, pastures, cattle pens, and large lawns.	Extremely Low. No appropriate habitat for nesting. Nearest and most recent observations are within the project along Neuralia Road where they were observed possibly migrating to potential breeding sites nearby.
Golden eagle (<i>Aquila chrysaetos</i>)	Federal: BCC, BGEPA State: FP WL	Year-round resident. Nests in tall trees, high rocky cliffs, or on electrical transmission towers. Forages in a variety of desert habitats with suitable prey or will scavenge for carrion.	Moderate. Appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby; very limited occurrences within and near the project limits with the exception of the Tehachapi Mountains where more sightings occur.
Short-eared owl (<i>Asio flammeus</i>)	Federal: -- State: SSC	Winter migrant or rare breeder in wet years. Close association with water filled dry lakes and marshes adjacent to irrigated alfalfa or grain fields, salt- and fresh-water marshes, and ungrazed grassland or old pastures.	Low. No appropriate nesting habitat nearby and very few known occurrences in the proximity of the project.
Long-eared owl (<i>Asio otus</i>)	Federal: -- State: SSC	Year-round resident; nests in conifers, ornamental trees, tamarisk, Western Joshua tree, desert riparian, desert washes, pinyon-juniper, desert woodlands, or on the ground that are adjacent to open grasslands, meadows, and shrublands for foraging.	Low. No appropriate nesting habitat nearby and very few known occurrences in the proximity of the project.
Burrowing owl (<i>Athene cucularia</i>)	Federal: BCC State: SSC	Year-round resident or migrant in arid and semi-arid habitats with well drained, level to gently sloping areas with sparse vegetation and bare ground: annual and perennial grasslands, deserts, and scrublands with low growing vegetation.	Moderate to High. Appropriate habitat and nearby known occurrences.
Ferruginous hawk (<i>Buteo regalis</i>)	Federal: BCC State: WL	Winter resident/migrant September through mid-April; roost in open areas, lone trees, utility poles. Hunt cooperatively in a variety of desert habitats.	Low. Appropriate foraging, perching, and roosting habitat; very limited occurrences within and near the project limits.

Table 4.4.3. Special-Status Wildlife Species with the Potential to Occur in the Project Area, continued

Species	Rank or Status ¹	Habitat Requirements	Potential for Occurrence
Swainson's hawk (<i>Buteo swainsoni</i>)	Federal: BCC State: ST	Summer migrant; nests in Western Joshua tree woodland, non-native roadside trees, pine, elm, and tamarisk, windrow trees in active or historical agricultural areas; high site fidelity. Forage in grasslands, native desert scrub and woodland habitats, agricultural lands, residential developments.	Moderately High to High. Appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby; nearby known and recent occurrences along Neuralia Road within and adjacent to the project.
Northern harrier (<i>Circus hudsonius</i>)	Federal: -- State: SSC	Summer migrant; breeds and forage in a variety of open and treeless habitats with low growing vegetative shrubland cover, weedy fields, pastures, alfalfa and grain croplands, desert sinks. Nest on the ground in patches of dense, tall vegetation in undisturbed areas.	Moderate to High. Appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby; known occurrences within the project limits.
Merlin (<i>Falco columbarius</i>)	Federal: -- State: WL	Winter migrant that requires dense trees close to bodies of water. Forage in a variety of desert and developed habitats	LOW. Appropriate foraging, perching, and roosting habitat and nearby known but limited occurrences.
Prairie falcon (<i>Falco mexicanus</i>)	Federal: BCC State: WL	Year-round resident. Variety of desert habitats: annual and perennial grasslands, rangeland, some agricultural fields, and desert scrub. Sheltered cliff ledges for cover and nesting in cliffs, bluffs, or rock outcrops.	Moderate to Moderately High. Appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby; nearby known occurrences.
American peregrine falcon (<i>Falco peregrinus anatum</i>)	Federal: BCC State: FP	Uncommon breeder and transient winter migrant. Forages within large concentrations of shorebirds at water filled desert playas in the winter; other locations include spring-fed wetlands, alkali meadows and mudflats used by shorebirds.	Extremely Low. No appropriate habitat on site; direct or indirect effects from project not anticipated but this species may forage or migrate through the project. Recent known locations nearby.
California condor (<i>Gymnogyps californianus</i>)	Federal: FE State: SE	Reintroduced resident population in the Tehachapi mountains of Kern County; make long-distance flights to forage. Wide variety of habitat types for scavenging to include roadways.	Low. Year-round foraging opportunities throughout the area and nearby known occurrences.

Table 4.4.3. Special-Status Wildlife Species with the Potential to Occur in the Project Area, continued

Species	Rank or Status ¹	Habitat Requirements	Potential for Occurrence
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Federal: BCC State: SSC	Year-round or winter migrant; breeds in shrublands, open woodlands with grass cover, areas of bare ground. Tall shrubs, trees, desert scrub, sparse desert riparian, fence lines and posts, and power lines for perches, territory defense. Impaling sites required for prey.	High. Appropriate habitat and nearby known occurrences.
Yellow warbler (<i>Setophaga petechia</i>)	Federal: BCC State: SSC	Summer migrant and local breeder with high site fidelity. Desert riparian and upland desert scrub for breeding and in migration: desert wash, Western Joshua tree woodland, irrigated agricultural fields and deciduous orchards with open water nearby.	Moderate. Appropriate habitat for migration movements and nearby known occurrences.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	Federal: -- State: SSC	Summer migrant and local colonial breeder in deep wet habitats: parks with ponds, water treatment plants, golf courses, dairy farms, and agricultural fields with tall emergent cattails and bulrush.	Low. No appropriate habitat for nesting. Known observations within the project limits; nearest nesting occurrences in close proximity to the project; they may be observed migrating to and from breeding sites nearby.
Mammals			
Pallid bat (<i>Antrozous pallidus</i>)	Federal: -- State: SSC	Found in arid scrublands, pinyon-juniper woodlands, and open habitats. Roosts in rock crevices, buildings, caves, mines, rock piles, and tree cavities.	Low to Moderate. May forage throughout or migrate or move through the area. Records nearby.
Spotted bat (<i>Euderma maculatum</i>)	Federal: -- State: SSC	Found in desert scrub, semi-desert scrub, desert washes, desert riparian woodlands, and pinyon-juniper woodlands. Roosts in rock crevices located on high cliffs.	Very Low to Low. May forage throughout or migrate through the area. Records nearby.
Pacific Townsend's big-eared bat (<i>Plecotus townsendii</i> ssp. <i>townsendii</i>)	Federal: -- State: SSC	Found in desert washes, shrublands, agricultural valleys, and hillsides with mixed vegetation. Roosts in limestone caves, lava tubes, abandoned mines, tunnels, buildings, and bridge structures.	Low to Moderate. May forage throughout or migrate through the area. Records nearby.
Desert kit fox (<i>Vulpes macrotis arsipus</i>)	Federal: -- State: CCR, Title 14	Creosote bush scrub vegetation communities in friable soils with little or no relief for den excavation.	Moderate to High. Appropriate habitat and nearby known occurrences.

Table 4.4.3. Special-Status Wildlife Species with the Potential to Occur in the Project Area, continued

Species	Rank or Status ¹	Habitat Requirements	Potential for Occurrence
American badger <i>(Taxidea taxus)</i>	Federal: -- State: SSC	Desert shrublands, open areas in grasslands, and agricultural areas. Friable soils for excavating deep burrows.	Moderate. Appropriate habitat and nearby known occurrences.
Mohave ground squirrel <i>(Xerospermophilus mohavensis)</i>	Federal: -- State: ST	Open desert shrubland habitats: creosote bush scrub, saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, Western Joshua tree woodland, and mixed woody scrub. Deep, sandy to gravelly soils on flat to moderately sloping terrain.	<p>California City Project Parcels: Low to Present.</p> <p>Appropriate habitat and nearby known occurrences in the project. A resident population was found in the southeast corner east of Neuralia Road, with what were determined to be dispersing juveniles found on the project site west of Neuralia Road. Habitat west of Neuralia Road is unlikely to support a permanent population.</p> <p>Kern County Project Parcels: Unsuitable, Very Low, Low, and Moderate to Present.</p> <p>A mix of inappropriate habitat and appropriate habitat with nearby known occurrences in the project. Positive live-trapping and camera trapping results in areas east and west of Neuralia Road, although based on the age classes (juvenile) and habitat quality there were no indications that the Kern County parcels are likely to support a permanent population.</p>

Notes:

¹ BCC = Birds of Conservation Concern

BGEPA = Bald and Golden Eagle Protection Act

CS = Candidate species for listing under the CESA

FT = Federally threatened

FE = Federally endangered

FP = California fully protected

ST = State threatened

SE = State endangered

WL = CDFW Watch List Species

SSC = California Species of Special Concern

CCR Title 14 = species protected as a fur-bearing mammal by CDFW

² Although crotch bumble bee and western bumble bee were designated by the California Fish and Game Commission as candidates for listing under CESA, as of November 2021 this designation has been reversed due to a court challenge and these two species are no longer considered CESA candidates. They remain in this table for legacy reasons but no longer afford any environmental protections under CEQA at this time.

Protocol Surveys

Protocol surveys for DT and burrowing owl (*Athene cunicularia*; BUOW) were conducted between August 20 and October 11, 2019. BUOW surveys preceded DT surveys, which did not begin until the beginning of the protocol survey period on September 1. Other special-status species surveyed for during the DT and BUOW protocol surveys included desert kit fox (*Vulpes macrotis arsipus*; DKF), American badger (*Taxidea taxus*), and migratory bird species. The following provides a summary of the results of the protocol wildlife surveys.

Desert tortoise (*Gopherus agassizii*)

The DT protocol survey effort adhered to the 2019 USFWS requirements. Under this protocol, the USFWS defines the “Action Area” of a project to include all areas to be affected directly or indirectly by a project action. The Kudu Solar Project DT protocol survey Action Area included portions of project parcels to be developed and collector line alternatives. The Action Area excluded all existing public use paved and/or dirt roads.

Kern County Project Parcels

No DT sign was detected within the Kern County portion of the Action Area.

California City Project Parcels

One carcass was located within the California City portion of the Action Area. The disarticulated carcass remains were of a subadult female tortoise. The animal was estimated to have died within the last 2 to 4 years prior to the observation. The cause of death could not be determined. Approximately 477 meters to 986 meters to the northeast of this carcass, a total of seven Class 4 burrows (deteriorated condition, possibly tortoise) were located and recorded.

When burrows deteriorate from weathering and disuse, it is often difficult to determine the species that created or last inhabited the burrow and the observation of Class 4 burrows alone is not indicative of DT habitation.

No live tortoises, scat, high quality burrows, tracks, courtship rings, eggs or eggshell fragments, or drinking depressions were detected. Observation of any of these items would indicate current habitation by the species.

Burrowing owl (*Athene cunicularia*)

Kern County Project Parcels

No live BUOWs or active burrows were observed within the Kern County portion of the Project site including the BUOW buffer survey areas. A total of three inactive BUOW burrows were observed sporadically within the Kern County portion of the Action Area. One inactive burrow was located in the southwestern portion north of Washburn Boulevard and west of the UP Railroad; one inactive burrow was located east of Gantt Road and south of Phillips Road; and one inactive burrow was located east of Neuralia Road and south of Dodson Avenue. No other BUOW sign was found within the BUOW buffer survey areas.

California City Project Parcels

One live BUOW was observed within the northern portion of the California City portion of the Action Area. This bird was not associated with a burrow; however there were two inactive burrows located in close proximity to the west of this observation. No other live BUOWs or active BUOW burrows were detected within the California City portion of the Action Area.

A total of seven inactive BUOW burrows were observed within the California City portion of the Two inactive burrows were located west of the live BUOW observation west of Yerba Boulevard; three inactive burrows were located in the southern portion west of Yerba Boulevard and north of the California City Airport; one inactive burrow was near Batz Street and south of Rudnick Boulevard; and one inactive burrow was north of Hans Boulevard. No BUOW sign was found within the BUOW buffer survey areas.

Desert kit fox (*Vulpes macrotis arsipus*)

A total of 66 inactive DKF dens were located within the Action Area. Forty-two inactive DKF dens were located within the California City portion of the Action Area and 24 inactive DKF dens were located within the Kern County portion of the Action Area. No dens were found within the BUOW buffer survey area. There were no active or pupping dens detected.

Mohave ground squirrel (*Xerospermophilus mohavensis*)

Detection of the California-threatened MGS requires trapping surveys during specific time periods; however, presence of MGS may be presumed without conducting trapping surveys. In order to determine if a project site can support MGS populations, a habitat suitability assessment needs to be conducted. A habitat suitability assessment was conducted for MGS by Dr. Philip Leitner between September 9 to 12, 2019. Dr. Leitner did not conduct MGS trapping surveys as part of the habitat suitability assessment. The purpose of the habitat suitability assessment was to evaluate the potential for the project parcels to support populations of MGS by visual observations of the soils and vegetation. Special attention was focused on the distribution and occurrence of plant species that are known to provide food and cover for MGS.

Dr. Leitner conducted a series of MGS focused surveys in 2020. This included visual surveys from March 15 to April 15; live-trapping surveys from March 15 to April 15, May 1 to 31, and June 15 to July 15; and camera trapping surveys from March 15 to July 15. All visual surveys were negative. During the live-trapping surveys, one adult male was trapped during the second trapping session and thirteen juveniles were trapped during the third trapping session. Numerous images of MGS were captured during the camera trapping surveys, with 24 of the 56 camera stations having positive results.

Habitat conditions on most of the project area do not appear suitable for permanent residency. Agricultural activity has resulted in significant degradation of native vegetation. This has resulted in the almost complete elimination of native herbaceous vegetation and forage shrubs that are essential for the maintenance of resident MGS populations. There is good evidence that the Desert Tortoise Research Natural Area (DTRNA) and CDFW Ecological Reserve lands to the east of the project site support a resident, reproductive MGS population. Although most juvenile MGS establish their home ranges close to their natal areas, some individuals can disperse up to 4 miles in May and June of their first summer. Within the on-site areas that were surveyed as part of this project, only one area was found to have a resident MGS population, immediately adjacent to the CDFW Ecological Reserve lands. There were no detections of resident adult MGS within the project area west of Neuralia Road, and juveniles detected west of Neuralia

Road were determined to be likely dispersing individuals from the resident population east of Neuralia Road.

The project site is within the geographic range of MGS and there are multiple records of this species being trapped and identified during surveys within the general vicinity of the project. Within the California City portion of the Action Area, the potential for MGS to occur is low to moderate based on appropriate habitat and nearby known occurrences. Within the Kern County portion of the Action Area, the potential for MGS to occur encompasses a range of suitability including unsuitable, very low, low, and moderate potential based upon a mix of inappropriate and appropriate habitat and nearby known occurrences.

Other Special-Status Species

One northern harrier (*Circus hudsonius*) was observed within the Kern County portion of the Action Area. It flew into the project site from the north, landed on a wooden power pole, then flew to the south.

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. The project site does not lie within a recognized wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project. The project site and surrounding area contain expanses of open habitat with little development and the site lacks any significant barriers to local wildlife movement. Wildlife would be expected to traverse the project site unimpeded during foraging and dispersal. Various species may travel between and among surrounding areas of low disturbance (predominantly present immediately to the north and east of the project site), or between irrigated agricultural fields south and west of the project site. The most likely areas for wildlife movement in this portion of the Mojave Desert would be within larger drainages, uninterrupted spans of native vegetation (creosote scrub, Western Joshua tree woodland, etc.), or along the foothills of the Tehachapi Mountains to the north, or San Gabriel Mountains to the south.

Jurisdictional Waters

Jurisdictional waters include aquatic resources such as streams, creeks, lakes, riparian areas, wetlands, and certain aquatic vegetation communities, which are considered sensitive biological resources and can fall under the jurisdiction of federal and/or state regulatory agencies including the Army Corps of Engineers (USACE), CDFW, and/or Lahontan Regional Water Quality Control Board (RWQCB).

The project area is situated in the central portion of the roughly 3,366-square mile Antelope-Fremont Valleys Watershed (Hydrologic Unit Code: 18090206), within the 909-square mile Fremont Hydrologic Unit (625.00), and the 719-square mile Koehn Hydrologic Area (625.40). There is a shallow surface water divide between the town of Mojave and the Fremont Valley. Surface drainage south of the divide flows south toward the town of Rosamond, while north of the divide surface, where the project area is located, drainage flows generally northeast through the relatively flat Fremont Valley to the dry Koehn Lake as part of the Koehn Lake/Cache Creek Watershed. Given the recognized geographic isolation of the Fremont Hydrologic Unit and subsequent lack of hydrologic connectivity to other traditionally navigable waters, the wetland and stream features within the project area are not subject to federal jurisdiction by the USACE. Two unnamed “blue-line” waterways occur in the project area.

The main drainage feature in the watershed is the Cache Creek channel, which is typically dry except during intense precipitation events. Cache Creek is an intermittent stream that flows out of the Tehachapi Mountains southwest of the project area and turns north to flow approximately one mile east of the project area, eventually draining into Koehn Lake.

There is one unnamed watercourse within the project area, characterized herein as an intermittent stream, which occurs within the southeast corner of the project area, flowing north and away from the California City Municipal Airport before eventually draining into Cache Creek.

One type of feature that may be subject to the jurisdiction of the RWQCB and CDFW was delineated during the field surveys: one intermittent stream. In addition, three ephemeral streams previously mapped in the *Eland 1 Solar Farm Preliminary Jurisdictional Waters/Wetlands Delineation Report* (Stantec 2018) occur within the project area. These features are described below and summarized in Table 4.4-4, *Summary of Potentially Jurisdictional Features in Project Area*.

Table 4.4-4. Summary of Potentially Jurisdictional Features in Project Area

Potential Waters Type	Vegetation Type	Total Acreage in Project Area
Intermittent Stream	Scale Broom Scrub	0.131
Ephemeral Stream*	Unvegetated	0.008
Ephemeral Stream*	Unvegetated	0.005
Ephemeral Stream*	Unvegetated	0.002
Total		0.146
Note: * = Previously mapped from Eland 1 Solar Farm Preliminary Jurisdictional Waters/Wetlands Delineation Report (Stantec 2018)		
Source: Stantec 2018, Appendix D-4 of this EIR		

Intermittent Stream

One intermittent stream (CDFW-01) was observed and documented within the southern portion of the project area just north of the California City Municipal Airport, with 0.131 acres occurring in the project area. During the delineation, water was observed occurring within the stream, originating from an underground source that intersects the ground surface approximately 25 feet south of the project area. Water was observed occurring in approximately 140 feet of the stream channel, flowing north from the southern boundary of the project area before flowing underground. This stream appears to dissipate in the open space east of the project area; however, the water does eventually drain into Cache Creek to the northeast, the main drainage that flows into Koehn Lake. The vegetation within this feature consists of scale broom scrub. Indicators observed within this aquatic resource feature included the presence of a defined bed and bank, crested ripples, organic drift, wracking, cut banks, exposed roots, changes in vegetation communities, and the presence of water.

Previously Mapped Jurisdictional Features

Three ephemeral streams were delineated as a result of efforts resulting in the *Eland 1 Solar Farm Preliminary Jurisdictional Waters/Wetlands Delineation Report* (Stantec 2018). Approximately 0.015 acres occurs within the project area.

4.4.3 Regulatory Setting

Federal

Endangered Species Act of 1973 (USC, Title 16, Sections 1531 through 1543)

The FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated Critical Habitat that USFWS determines is required for the survival and recovery of these listed species.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of Critical Habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in CCR Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing “take” (harass, harm, pursue, hunt, wound, kill, etc.) that may occur incidental to an otherwise legal activity. Section 9 lists those actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of “harm” includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. “Harass” is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at Code of Federal Regulation (CFR), Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS.

Section 4(a)(3) and (b)(2) of the FESA 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 Section 3(5)(A) of the FESA: (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” (USC Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property. On December 22, 2017, the Office of the Solicitor of the Department of the Interior issued a Memorandum (Opinion M-37050) regarding the MBTA prohibition on incidental take, which substantially modifies the Department’s policy regarding the enforcement of the MBTA against the incidental taking or killing of migratory birds. The Solicitor’s Opinion is that the MBTA does not prohibit incidental take, such that “the statute’s prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs.”

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 of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles by prohibiting the taking, possession, and commerce of these species and establishes civil penalties for violation of this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. (Federal Register, volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC, Title 33, Sections 1251 through 1376)

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. (WoUS) to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCBs each administer the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into WoUS. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into WoUS, 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 US Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Wetlands and Other Waters of the United States

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies. USACE exerts jurisdiction over WoUS, including all waters that are subject to the ebb and flow of the tide; wetlands and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds;

and tributaries of the above features. The extent of WoUS is generally defined as that portion that falls within the limits of the ordinary high-water mark. On January 23, 2020, the EPA and the USACE finalized the Navigable Waters Protection Rule to define WoUS. On April 21, 2020, the EPA and the USACE published the Navigable Waters Protection Rule in the Federal Register. On June 22, 2020, 60 days after publication in the Federal Register, the Navigable Waters Protection Rule became effective across the nation, including the state of California.

Under the Navigable Waters Protection Rule, waters considered jurisdictional WoUS are outlined in four categories as follows:

1. Territorial Seas and TNWs

- Under the final rule, the territorial seas and traditional navigable waters include large rivers and lakes as well as tidally-influenced waterbodies used in interstate or foreign commerce.

2. Tributaries

- Under the final rule, tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year.
- These naturally occurring surface water channels must flow more often than just after a single precipitation event—that is, tributaries must be perennial or intermittent.
- Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other WoUS, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.

3. Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a TNW or territorial sea in a typical year either directly or through other WOUS, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a “water of the United States” in a typical year.

4. Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are “adjacent wetlands.”
- Wetlands separated from a WoUS by only a natural berm, bank or dune are also “adjacent.”
- Wetlands inundated by flooding from a WoUS in a typical year are “adjacent.”

- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are “adjacent” so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.
- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The final rule also outlines what are not WoUS. The following waters/features are not jurisdictional under the Navigable Waters Protection Rule:

- Waterbodies that are not included in the four categories of WoUS.
- Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
- Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.
- Diffuse stormwater run-off and directional sheet flow over upland.
- Many farm and roadside ditches.
- Prior converted cropland.
- Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.
- Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional water.
- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
- Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
- Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.
- Waste treatment systems.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by USACE as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by USACE (USACE 1987).

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is a landscape-level plan that streamlines renewable energy development while conserving unique and valuable desert ecosystems and providing outdoor recreation opportunities. The DRECP plan area encompasses 22.5 million acres in the desert regions and adjacent lands of seven California counties: Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. The DRECP is a collaborative effort between the California Energy Commission, CDFW, Bureau of Land Management (BLM), and USFWS (BLM 2016).

The BLM signed the Record of Decision approving its Land Use Plan Amendment on September 14, 2016, completing Phase 1 of the DRECP. The BLM Plan Amendment covers the 10 million acres of BLM managed lands in the DRECP plan area and supports the overall renewable energy and conservation goals of the DRECP. Phase 2 of the DRECP would apply to private lands and focus on better aligning local, state, and federal renewable energy development and conservation plans, policies, and goals. It includes building off of the Renewable Energy Conservation Planning Grants that were awarded by the California Energy Commission to counties in the plan area (BLM 2016). No state or local government has adopted the DRECP for application to private lands and the DRECP therefore does not apply to the project site.

State

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

The CESA (California Fish and Game Code Section 2050 et seq.) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is “consistent” with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for an incidental take permit under Section 2081(b) to remain in compliance with the CESA. See discussion below regarding details for California Fish and Game Code Sections 2080 and 2081.

Regional Water Quality Control Boards

Under Section 401 of the CWA, the RWQCBs must certify that actions receiving authorization under Section 404 of the CWA also meet state water quality standards. The RWQCBs also regulate waters of the State under the Porter-Cologne Act Water Quality Control Act (Porter Cologne Act). The RWQCBs require 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 RWQCBs typically require compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCBs also have jurisdiction over waters deemed ‘isolated’ or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the State and prospective dischargers are required obtain authorization through an

Order of Waste Discharge or waiver thereof from the applicable RWQCB and comply with other requirements of Porter-Cologne Act. The project site is located within the jurisdiction of the Lahontan RWQCB.

On April 2, 2019, the State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the State; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures were approved by the Office of Administrative Law on August 28, 2019, and became effective on May 28, 2020.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne 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 Section 401 of the CWA. The project site is under the jurisdiction of the Lahontan RWQCB and its associated basin plan.

California Fish and Game Code

Sections 1600 through 1616. Under these sections of the California Fish and Game Code, the project operator is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a “stream” is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

Sections 2080 and 2081. Section 2080 of the California Fish and Game Code states that “no person shall import or export out of the state of California, or take, possess, purchase, or sell within this State, any species, or any part or product thereof, that the California Fish and Game Commission determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter [Chapter 1.5 Endangered Species], or the Native Plant Protection Act, or the CDNPA. Pursuant to Section 2081 of the code, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful

activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project proponent ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Sections 3503 3503.5, 3513, and 3800. Under these sections of the California Fish and Game Code, 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 unless authorized by rules or regulations approved by the Secretary of the Interior; 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 California Fish and Game Code. These statutes prohibit take or possession of fully protected species unless authorized pursuant to the Natural Community Conservation Planning Act or through specific legislative action.

Sections 4000 through 4003. Under Section 4000 of the California Fish and Game Code, it is unlawful to conduct activities that would result in the taking, possessing, or destroying of any fur-bearing mammals, including DKFs, without prior authorization from CDFW.

CEQA Guidelines, Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDDB as sensitive are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

California Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913)

California's Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of this act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. The project proponent is required to conduct botanical

inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Desert Native Plant Protection Act (California Food and Agricultural Code Sections 800071 through 80075)

The CDNPA affords protection to certain native desert plant species, including all species of the agave family (*Agavaceae*), all species of the genus *Prosopis*, all species of the genus *Cercidium*. It is applicable only within the boundaries of the Counties of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants unless a valid permit or wood receipt and required tags and seals are obtained. The sheriff or commissioner of the county where the collection will occur will provide the appropriate permits, tags, and seals for a fee.

Local

Kern County General Plan

The Kern County General Plan identifies the federal, State, and local statutes, ordinances, or policies that govern the conservation of biological resources that must be considered by Kern County during the decision-making process for any project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resource attributes. Section 1.10, *General Provisions*, provides goals, policies, and implementation measures in the Kern County General Plan applicable to biological resources, as related to the project, are described below.

Chapter 1. Land Use, Open Space and Conservation Element

1.10. General Provisions

1.10.5. Threatened and Endangered Species

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 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 30: The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and federal programs concerning endangered species conservation issues.
- 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 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 in undisturbed land supporting State or federally protected plant and wildlife species [sic].

Kern County Zoning Ordinance

Chapter 19.81. Dark Skies Ordinance (Outdoor Lighting)

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

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

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

California City General Plan

The goals, policies, and implementation measures in the California City General Plan for biological resources applicable to the project are provided below. As of May 11, 2021, the City of California has adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and other renewable power generation as a conditional use in the O/RA zone district.

Chapter 5. Open Space and Conservation Element

5.15 Conservation Goals, Policies, and Implementation Measures

Goal

- Promote conservation of sensitive vegetation and wildlife.

Policies

- Protect sensitive vegetation and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans.
- Maintain and promote the retention of natural setting and use of native or adaptable vegetation.
- Encourage the preservation of Western Joshua trees, known wildflower displays, or other biologically sensitive flora determined during biological surveys.
- Ensure that development expands without adversely impacting significant natural resources.
- Continue to require biota studies as a requirement of DRC for all new subdivisions, large apartment complexes, commercial and industrial projects.

Implementation Measure

C-13: The City shall require the preservation of biological resources by implementation of the following measures:

- Prior to issuance of a grading or building permit, new development proposals, including on previously disturbed land, shall be required to complete a general biological resources assessment to identify the presence of any sensitive biological resources, including but not limited to sensitive habitat, sensitive plant species, and sensitive wildlife species, jurisdictional drainage features, and wildlife corridors on the project site. Recommendations and/or mitigation measures shall be incorporated into project as conditions of approval.

4.4.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to biological resources have been evaluated using a variety of resources, including the *Biological Evaluation* prepared by EPC (EPC 2020a), the *Wildlife Survey Report* prepared by EPC (EPC 2020b), the *Rare Plant Survey* prepared by EREMICO Biological Services, LLC (EREMICO 2020), the *Kudu Solar Farm Preliminary Jurisdictional Aquatic Resources Delineation Report* prepared by Stantec (Stantec 2020d), and the *Mohave Ground Squirrel Protocol Survey* prepared by Dr. Philip Leitner (Leitner 2021), located in Appendices D-1 through D-5 of this EIR, respectively, as well as a thorough literature and database review. Project impacts were assessed based upon the location of construction, operation and maintenance, and decommissioning activities and the siting of permanent project improvements. The potential for special-status species to occur on the project site is based on the results of database research, biological assessments, field surveys conducted on the project site, presence of suitable habitat, and the proximity of the project site to previously recorded occurrences that have been reported to the CDFW and CNPS. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a significant adverse effect on biological resources if it would:

- a. Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or the USFWS;
- b. Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS;
- c. Has a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or,
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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 needed in the EIR. These issue areas are thus scoped out of this EIR. It was determined that the project would not:

- 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.

Refer to Section 5.1, *Environmental Effects Found Not to be Significant*, for further explanation.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to biological resources, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.

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 wildlife, 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.

Solar Facility

Construction

Special-Status Plants

Potential permanent, direct impacts to special-status and other protected plants, where present, could occur in association with habitat loss from implementation of the proposed project by removal of existing vegetation and permanent development of the solar facility. In addition, grading associated with these activities could result in mortality of special-status plant individuals. Potential permanent, indirect impacts to special-status plant species, if present, may arise from population fragmentation and introduction of nonnative weeds. Population fragmentation could affect pollinator activity and adversely affect gene flow. Introduction and establishment of invasive weeds within, or adjacent to, special-status plant populations can adversely affect native species by reducing growth and recruitment. Such impacts would be avoided or reduced to less than significant through implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, and MM 4.4-9KC through MM 4.4-13KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-7CC, and MM 4.4-9CC through 4.4-12CC, which include a Construction Worker Environmental Awareness Training program, general protective measures, requirements for preconstruction rare plant surveys, and development of a Habitat Mitigation Plan, if required by wildlife agencies, to ensure adequate knowledge, management and conservation of botanical resources, control weed infestations, and limit worker access to habitat outside designated work areas.

Loss of more than 10 percent of habitat occupied by on-site special-status plant species, where present within the project area or potentially occurring within the project area, including Barstow woolly sunflower and Mojave spineflower, would be considered significant. However, this potentially significant impact can be mitigated to less than significant through the implementation of Mitigation Measure MM 4.4-12 KC and MM 4.4-12CC.

Loss of plants protected under the CDNPA (i.e., silver cholla, beavertail cactus, and Western Joshua tree), where present within the project area or potentially occurring within the project area, would be considered significant if their removal was undertaken without a permit. However, this potentially significant impact can be mitigated to less than significant through the implementation of Mitigation Measure MM 4.4-13KC and MM 4.4-13CC.

In addition, potential temporary, indirect significant impacts to special-status plant species located off-site could arise from runoff and sedimentation, erosion, fugitive dust, and unauthorized access by construction workers. Runoff, sedimentation, and erosion can adversely affect plant populations by damaging individuals or by altering site conditions sufficiently to favor other species that could competitively displace the special-status species. Construction-generated fugitive dust can adversely affect plants by reducing the rates of metabolic processes such as photosynthesis and respiration. Unauthorized access by construction workers and their vehicles could trample and destroy individuals outside of, but immediately adjacent to, the proposed construction areas. These impacts would be avoided or reduced to less than significant through implementation of the general project avoidance and minimization measures as proposed in Mitigation Measures MM 4.4-1KC, MM 4.4-4KC through MM 4.4-7KC, and MM 4.4-9KC through MM 4.4-13KC, as well as Mitigation Measures MM 4.4-1CC, MM 4.4-4CC through 4.4-7CC, and MM 4.4-9CC through MM 4.4-13CC).

Barstow Woolly Sunflower. Barstow woolly sunflowers were recorded at one location east of Neuralia Road in California City (APN 302-322-06). Twenty-eight individuals were observed in an approximately one square meter area on a small silt-clay pan in an open area with very few shrubs. Project construction would impact this special-status plant species. However, as stated above, this potentially significant impact can be mitigated to less than significant through the implementation of Mitigation Measure MM 4.4-12KC and MM 4.4-12CC.

Mojave Spineflower. An estimated 900 Mojave spineflowers were recorded at eight locations in the southeastern portion of the east of Neuralia Road in California City. The population area totaled approximately 195 square meters. The species was typically observed in open flats with silty loam or silty clay loam soil and gravel or scattered pebbles on the surface. Project construction would impact this special-status plant species; however, as stated above, this potentially significant impact can be mitigated to less than significant through the implementation of Mitigation Measure MM 4.4-12KC and MM 4.4-12CC.

Western Joshua Tree. A small number of Western Joshua trees were found scattered on the western portion of the project area in Kern County As summarized in Table 4.4-4, *CDNPA Plants and Number of Individuals in Action Area*, these included one Western Joshua tree shorter than two feet tall, and four Western Joshua trees between two and eight feet tall. Potential permanent, direct impacts to on-site Western Joshua trees primarily include the complete loss of this species within the boundaries of the project area from removal of existing vegetation and permanent development of the site. Potential permanent, indirect impacts to Western Joshua trees may arise from population fragmentation in regard to surrounding regional occurrences of this species and this habitat type. Such impacts would be reduced to less than significant through implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, and MM 4.4-1CC through MM 4.4-7CC. In addition, Mitigation Measure MM 4.4-13KC would apply if Western Joshua tree is no longer listed as a candidate, threatened, or endangered species under the CESA at the time of issuance of a building or grading permit, whereas Mitigation Measure MM 4.4-14KC would apply if Western Joshua tree is still listed as a candidate, threatened, or endangered species under the CESA at the time of issuance of a building or grading permit in areas that would involve the removal of Western Joshua trees.

Silver Cholla. Silver chollas were observed predominantly in the northern and westernmost portions of the in Kern County as well as the southeastern portion of the in California City. In total, 736 silver chollas were recorded in Kern County and 15 silver chollas were recorded in California City. Potential permanent, direct impacts to on-site silver chollas primarily include the complete loss of this species within the boundaries of the project area from removal of existing vegetation and permanent development of the site. Potential permanent, indirect impacts to silver chollas may arise from population fragmentation in regard to

surrounding regional occurrences of this species and this habitat type. Such impacts would be reduced to less than significant through implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-12KC, and MM 4.4-1CC through MM 4.4-7CC.

Table 4.4-5. CDNPA Plants and Number of Individuals in Action Area

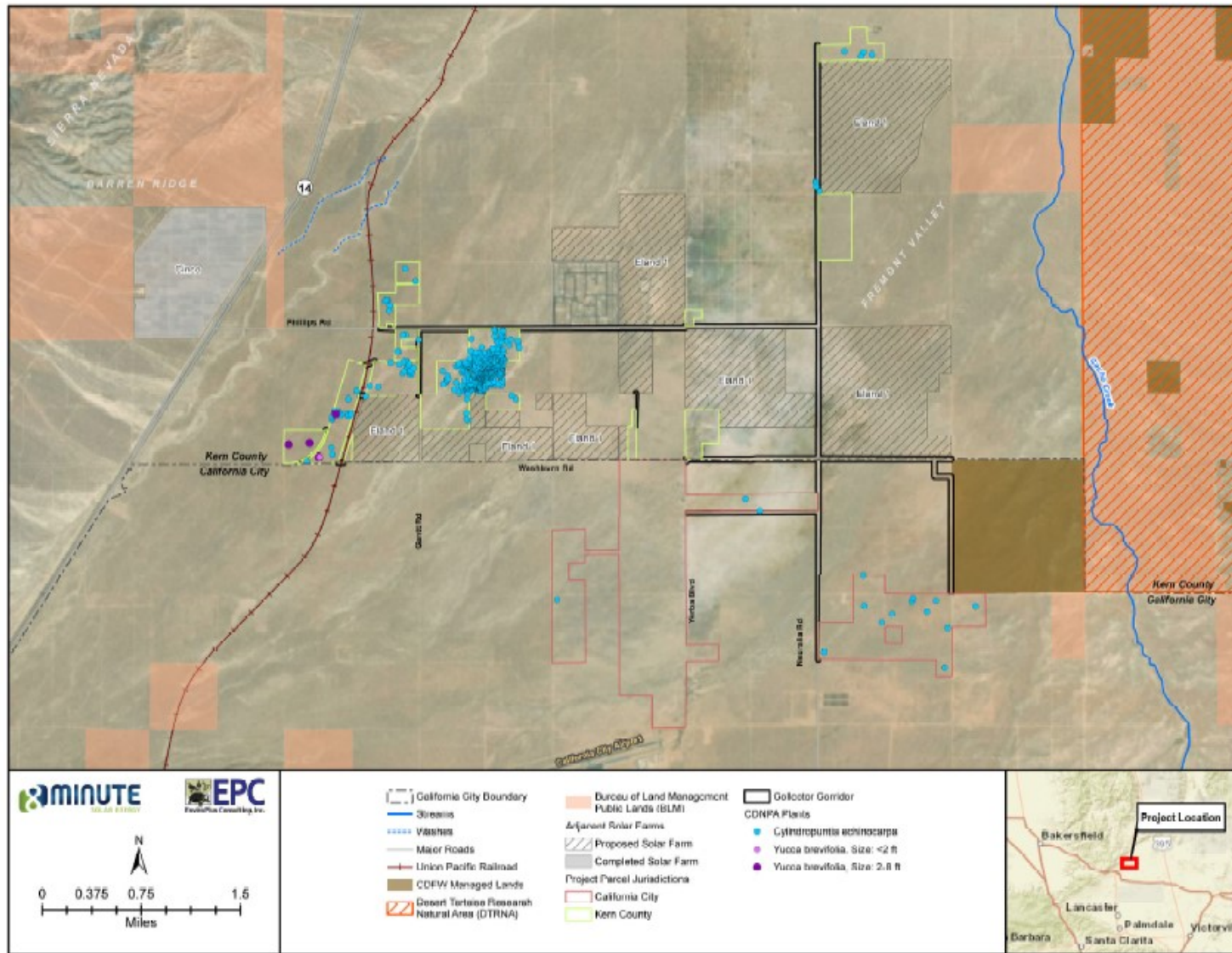
CDNPA Plants	Kern County # Plants	California City # Plants
Silver Cholla	736	15
Joshua Tree < 2 feet tall	1	0
2-8 feet tall	4	0
> 8 feet tall	0	0
Source: EREMICO Biological Services, LLC 2020		

Special-Status Wildlife

Mohave Ground Squirrel. As discussed above, most of the project parcels do not appear suitable for permanent residency by the MGS as a result of significant degradation of native vegetation. There is good evidence that the DTRNA and CDFW Ecological Reserve lands to the east of the project support a resident, reproductive MGS population. Perhaps unsurprisingly, the California City parcel in the southeast of the project, adjacent to the CDFW Ecological Reserve where MGS is known to occur, was found during focused surveys to contain a resident breeding population of MGS (Leitner 2021). Juveniles were found throughout many of the other Kern County and California City parcels and were determined to be dispersing from the resident population(s) east of Neuralia Road. However, based on the quality of habitat and the lack of adults in these areas, it was determined that most of the project site is still unlikely to support resident or permanent MGS populations.

Potential direct impacts to MGS include the potential for mortality of individuals during construction, operation, and decommissioning activities. MGS are subject to similar direct impacts that could also occur to DT, BUOWs, DKF, and American badger. Direct impacts from construction activities include site grading, heavy equipment operation, and general vehicle traffic that could kill or injure MGS as a result of collisions with construction equipment or entombment in burrows. Construction activities could also result in disturbance or harassment.

Indirect impacts to MGS could include increased predator depredation resulting from increases in coyote, badger, domestic or feral dog, raven, and raptor population numbers increasing. Increases in predator populations can be due to various factors and conditions which may include but not be limited to the provision of new perching sites and temporarily ponding water from solar panel cleaning and in the proposed infiltration basins, as well as potential food items in unsecured trash containers. Such impacts would be considered significant.

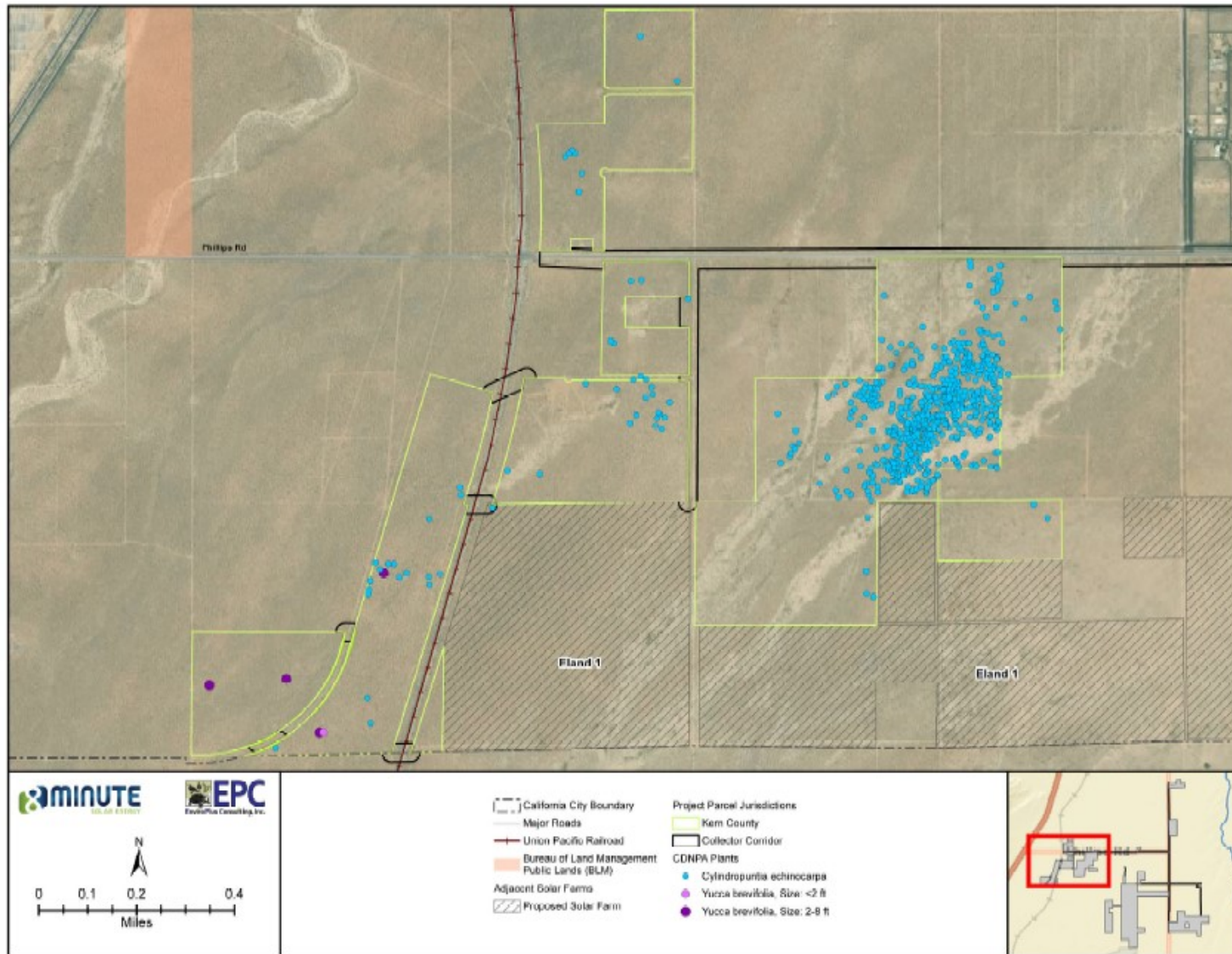


ZCC 24, Map No. 152
 CUP 28, Map No. 152

GPA 10, Map No. 152
 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.4-1. CDNPA Plants, Overview



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.4-2. CDNPA Plants, Detailed View

The potential for direct and indirect impacts to MGS within the solar facility is expected to be the same, with the same recommended mitigation measures. Implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-11KC, MM 4.4-14KC through MM 4.4-17KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-11CC, MM 4.4-14CC through MM 4.4-17CC, which avoid and minimize impacts to MGS and other wildlife, includes acquisition of compensatory lands to mitigate for the loss of any suitable MGS habitat that would reduce potential project related impacts to this species to less than significant.

Desert Tortoise. Potential direct impacts to DT include the potential for mortality of individuals during construction, operation, and decommissioning activities. DT are subject to similar direct impacts that could also occur to MGS, DKF, American badger, and BUOW. Direct impacts from construction activities include site grading, heavy equipment operation, and general vehicle traffic that could kill or injure DT as a result of collisions with construction equipment or entombment in burrows. Construction activities could also result in disturbance or harassment. Although no live DT were detected during the USFWS protocol survey, appropriate measures will be implemented to ensure no incidental take occurs during construction activities as described in Mitigation Measures MM 4.4-1KC through MM 4.4-11KC and MM 4.4-14KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-11CC, and MM 4.4-14CC.

Indirect impacts to DT could include increased common raven depredation resulting from increases in raven population numbers due to the provision of new perching sites and temporarily ponding water from solar panel cleaning and in the proposed infiltration basins, as well as potential food items in unsecured trash containers. New project development can also increase the presence of other DT predators such as coyote, badger, and domestic or feral dogs. Such impacts would be considered significant.

Common ravens are a predator of DT and their population numbers in the Mojave Desert have been enhanced through human development, posing a threat to DT populations. The project operator may be required to implement Mitigation Measure MM 4.4-21KC and MM 4.4-20CC, which includes project specific measures to manage raven populations during construction and operations of the proposed project. Impacts to DT and other wildlife resulting from potential increases in common raven populations in the project area as a result of the proposed project are addressed further in the common raven management discussion below.

DT sign was found within the solar facility; however, no live tortoises were found anywhere within the project area. However, because this is a wide-ranging species that is known to occur in the project vicinity, the potential for impacts anywhere in the solar facility remains.

With implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-11KC, MM 4.4-14KC, and MM 4.4-20KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-11CC, MM 4.4-14CC, and MM 4.4-20CC, potential impacts on DT would be reduced to less than significant.

Burrowing Owl. As discussed above, no live BUOWs or active burrows were observed within the Kern County portion of the Action Area including the BUOW buffer survey areas. A total of three inactive BUOW burrows were observed sporadically within the Kern County portion of the Action Area. One live BUOW was observed within the northern portion of the California City portion of the Action Area. This bird was not associated with a burrow; however, there were two inactive burrows located in close proximity to the west of this observation. No other live BUOWs or active BUOW burrows were detected within the California City portion of the Action Area.

This species could winter, breed, or forage within or adjacent to the project area. Vehicle traffic during construction, site operations and maintenance, and decommissioning activities could result in vehicle strikes and mortality of BUOWs. Site grading could collapse or fill occupied burrows, potentially trapping and killing BUOWs, as well as affecting reproductive success through nest destruction. The take of breeding and wintering habitat through the development of the solar arrays, associated facilities and access roads, transmission lines, and substations would also be considered a direct impact.

Indirect impacts could include degradation of breeding and wintering habitat off-site through increases in noise and light due to project construction and operations, potentially affecting breeding and wintering BUOWs. Project activities could result in reproductive failure should nests be located near to the project footprint as well as resulting in the potential loss of foraging habitat for this species.

Potentially significant impacts on BUOW would be reduced to less-than-significant levels through the implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-11KC, MM 4.4-16KC, MM 4.4-17KC, and MM 4.4-20KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-11CC, MM 4.4-15CC, MM 4.4-16CC, and MM 4.4-19CC.

Desert Kit Fox. As discussed above, a total of 66 inactive DKF dens were located within the Action Area. Forty-two inactive DKF dens were located within the California City portion of the Action Area and 24 inactive DKF dens were located within the Kern County portion of the Action Area. No active or pupping dens were detected within the solar facility areas. Since the potential for DKF has a moderate to high occurrence throughout the project area, construction activities, including site grading, heavy equipment operation, and general vehicle traffic could kill or injure DKF as a result of collisions with construction equipment or entombment in dens. Construction activities could also result in disturbance or harassment of individuals. Conversion of potential habitat to a solar facility would result in local reductions in foraging and dispersal habitat for DKF. Potential impacts to DKF and recommended mitigation are the same throughout the project solar facility area. However, with implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, MM 4.4-16KC, and MM 4.4-18KC, as well as Mitigation measures MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, MM 4.4-15CC, and MM 4.4-17CC, potential impacts on DKF would be reduced to less than significant.

American Badger. American badger may forage on or disperse through the project area. Because their potential for occurrence on the project area is moderate, construction activities, including site grading, heavy equipment operation, and general vehicle traffic could kill or injure badgers as a result of collisions with construction equipment or entombment in dens. Construction activities could also result in disturbance or harassment of individuals. Conversion of potential habitat to a solar facility would result in local reductions in foraging and dispersal habitat for American badger. However, with implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, MM 4.4-16KC, and MM 4.4-18KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, MM 4.4-15CC, and MM 4.4-17CC, potential impacts on American badger would be reduced to less than significant.

Golden Eagle and Other Raptors. No golden eagles, prairie falcon, or Swainson's hawk were observed in the project area. However, there is appropriate habitat for foraging and perching in the area with suitable nesting habitats nearby. One northern harrier was observed within the Kern County portion of the Action Area.

Access to power poles and other tall perching structures can provide these species with an excellent view of the desert landscape for detecting prey as well as utilizing the perch to consume their prey. Shorter perch

locations may include the many large stemmed Western Joshua trees on site and could be of foraging benefit for the northern harrier. Some raptors, such as red-tailed hawk, may nest in trees in nearby Boron or at rural residences nearby. The close proximity between nesting sites and foraging opportunities are important factors for raptors such as red-tailed hawk. The same conditions that factor into the potential presence of golden eagle and prairie falcon also factor into the presence of the observed species. Potential direct impacts to these raptor species include construction of collector transmission lines, which could provide additional perching structures that pose a high risk of electrocution and death for large birds. This potentially significant impact would be mitigated to less than significant levels through the implementation of Mitigation Measures MM 4.4-19KC, MM 4.4-20KC, MM 4.4-18CC, and MM 4.4-19CC.

Potential indirect impacts to raptors include the loss of foraging habitat and interference with reproductive success at nearby or potential on site nests due to noise and human activity associated with project construction. For instance, if red-tailed hawks were nesting within 500 feet, particularly with direct line of sight, project-related activities could potentially result in a nest failure. Mitigation Measures MM 4.4-19KC, MM 4.4-20KC, MM 4.4-18CC, and MM 4.4-19CC would reduce indirect impacts on avian species to less than significant.

Other Migratory or Nesting Migratory Songbirds. A total of 14 avian species were detected during the August 20 and October 11, 2019, wildlife survey. In addition, the project site contains potentially suitable nesting and foraging habitat for loggerhead shrike. These species are protected under the MBTA and various provisions of the California Fish and Game Code. Many of these species are likely to forage within or adjacent to the proposed project; establish nesting territories; or migrate through the project site during spring and fall migrations. Project-related direct impacts on nesting birds could include mortality of individuals and destruction of nests and eggs. Indirect impacts could include interference with reproductive success and nest abandonment due to construction noise and increases in human activity. Artificial lighting could increase predation on individuals and eggs and disrupt reproductive behaviors. The conversion of open land to a solar facility would result in loss of some potential breeding and foraging habitat. Some birds may continue to nest beneath the constructed arrays. The installation of transmission lines and buildings could provide new perches for predators, such as ravens and raptors, which could contribute to declines in local songbird populations. Finally, the installation of uncapped vertical, hollow poles, such as may be used to mount the solar panels and are used in chain link fencing, could result in entrapment and death of songbirds. These activities would be considered to result in significant impacts on nesting birds. However, with implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, MM 4.4-19KC, and MM 4.4-20KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, MM 4.4-18CC, and MM 4.4-19CC, potential impacts on special-status birds would be reduced to less than significant.

Common Ravens. Common raven numbers have grown substantially in the past few decades in the west Mojave Desert. Between 1968 and 1988, the number of ravens in the Mojave Desert increased by over 1,500 percent and this increase is likely much higher in the western Mojave Desert. Ravens are not considered a special-status species; however, they are protected by the MBTA even though they are known predators of hatchling and juvenile DT, MGS, the eggs and fledglings of BUOWs, as well as many other songbird species, small mammal species, and reptile species. Ravens will compete with other birds such as raptors for prey and nesting sites. Raven numbers have become so great that they pose a serious threat to many desert species and the species' population growth is directly attributed to human development and the subsidies created by humans (e.g., trash and food waste at landfills, in open dumpsters and garbage

cans, strip malls and fast food restaurants, highway rest stops) that support this adaptable species. Ravens were observed during the wildlife surveys between August 20 and October 11, 2019.

As indicated above, the project could provide new roosting, nesting, and perching sites for the common raven from the installation of new solar facilities (e.g., PV solar panels, fences, and buildings). The proposed project could potentially contribute to maintaining artificially high numbers of common ravens, which threatens desert wildlife, including federal and state-listed species. However, this significant impact would be reduced to less than significant levels with implementation of Mitigation Measure MM 4.4-21KC and MM 4.4-20CC which would require the project operator to prepare a Raven Management Plan in consultation with the USFWS and CDFW. Contribution to the Regional Common Raven Management Fund would also reduce project impacts from common raven on DT, MGS, and other desert wildlife to less than significant.

Operations and Maintenance

Direct impacts to special-status species are unlikely to result from project operation and maintenance activities because construction of the project would remove habitat for the special-status species on the project site, although wildlife movement through or around the project site (i.e., DT fencing) would still allow limited movement. However, maintenance activities on the project site could impact the special-status plant species if avoidance measures are not implemented. Project operation could also result in direct or indirect impacts to wildlife in proximity to vehicle movements, vegetation maintenance, and project 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 and City of California City Zoning Ordinances, and the goals, policies, and implementation measures of the Kern County and City of California City General Plans. 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 Measure MM 4.1-5. This would help to reduce potential impacts on wildlife moving through the area. Implementation of Mitigation Measures MM 4.4-20KC, MM 4.4-21KC, MM 4.4-19CC, and 4.4-20CC would further reduce potential direct and indirect impacts to wildlife during project operations and maintenance to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.1-5 (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), regarding compliance with the Kern County Dark Skies Ordinance.

MM 4.4-1KC: Prior to the issuance of grading or building permits, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by California Department of Fish and Wildlife to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist shall be on-site during all fencing and ground disturbance activities throughout the construction phase. The project Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures described herein. Work shall proceed only after hazards to special-status species are removed and the species is no

longer at risk. The project Lead Biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.

MM 4.4-2KC: Prior to the issuance of grading or building permits, and for the duration of construction activities, all new construction workers at the project site shall attend a Worker Environmental Awareness Program, developed and presented by the project Lead Biologist. As part of the Worker Environmental Awareness Program training, the project Lead Biologist shall perform the following training-related tasks:

- a. Provide the training materials for Worker Environmental Awareness Program training. These materials shall include the measures and mitigation requirements for protected plant and wildlife species (e.g., avoidance and buffer requirements, nighttime construction limitations), and applicable fire protection measures. WEAP training shall also include driver training to avoid and minimize collision risks with protected species, and reporting protocols in the event that any dead or injured wildlife are discovered.
- b. Send a copy of all Worker Environmental Awareness Program training materials to the Kern County Planning and Natural Resources Department.
- c. Maintain a list on-site of all employees who have undergone Worker Environmental Awareness Program training. A copy of this list shall be provided to the Kern County Planning and Natural Resources Department, as necessary.

MM 4.4-3KC: The Worker Environmental Awareness Program shall be presented by the Lead Biologist and shall include information on the life history of each federal and state-listed species, as well as other special-status wildlife, natural communities, and plant species that may be encountered during construction activities, their legal protections, the definition of “take” under the federal and state Endangered Species Acts, measures the project operator is implementing to protect special-status species, reporting requirements, specific measures that each worker shall employ to avoid take of special-status wildlife species, and penalties for violation of the acts. Training shall be documented as follows:

- a. An acknowledgement form signed by each worker indicating that environmental training has been completed.
- b. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are in possession of hard hats with the required sticker.
- c. A copy of the training transcript/training video and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgements forms shall be submitted to the Kern County Planning and Natural Resources Department.

- MM 4.4-4KC:** During construction and decommissioning the anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with stakes and flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. The construction crews and contractor(s) shall be held responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits.
- MM 4.4-5KC:** New and existing roads that are planned for either construction or widening shall not extend beyond the planned impact area. All vehicles passing or turning around shall do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, a biological resources survey shall be conducted by the Lead Biologist or by biological monitor(s) under the Lead Biologist's supervision to determine if listed or special-status species would be impacted. Impacts shall be avoided to the maximum extent practicable or shall be fully mitigated for. Construction shall not begin until the route is cleared for biological resources. The route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction and use.
- MM 4.4-6KC:** Spoils shall be stockpiled in areas disturbed by the project. Stockpile areas shall be marked to define the limits where stockpiling can occur. Standard best management practices shall be employed to prevent loss of habitat due to erosion caused by project-related impacts (i.e., grading or clearing for new roads). All detected erosion shall be remedied within two days of discovery.
- MM 4.4-7KC:** All ground-disturbing construction and decommissioning activities shall be monitored by the qualified Lead Biologist or by biological monitors under the Lead Biologist's supervision to ensure compliance with avoidance and minimization measures.
- MM 4.4-8KC:** During construction and decommissioning the project operator and/or contractor shall implement the following general avoidance and protective measures:
- a. Prior to issuance of grading or building permits but after consulting with the United States Fish and Wildlife Service and California Department of Fish and Wildlife, the solar facility project site (east of State Route 14 for the Kudu Solar site) shall be fenced with a permanent desert tortoise exclusion fence to keep any desert tortoises that may be using habitat adjacent to the facility from entering during construction, operations and maintenance, and dismantling and restoration (decommissioning) phases. The project proponent shall submit a fencing plan that outlines the location, type of fence, and construction methods to United States Fish and Wildlife Service and California Department of Fish and Wildlife for review. Desert tortoise-proof gates or guards shall be established at all photovoltaic solar facility entry points, unless otherwise approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife. Workers installing the exclusion fencing shall have undergone the worker training program mandated in Mitigation Measure MM 4.4-2KC and a biological monitor under the authority of the Lead Biologist shall be present during exclusion fencing installation.

- b. The fencing shall be routinely inspected after precipitation events of more than one inch at each ephemeral drainage crossing. Any damage to the fencing shall be repaired immediately or no later than 2 days following the observation.
- c. Following the construction of desert tortoise exclusion fencing around the solar facility perimeters, clearance surveys shall be conducted by the Lead Biologist to ensure that no desert tortoises, Mohave ground squirrels, or other listed wildlife species are trapped within the fenced area. The Lead Biologist may be assisted by biological monitors under the supervision of the Lead Biologist. The clearance surveys shall be conducted no more than 30 days prior to ground disturbing activities associated with construction, operations and maintenance, or decommissioning. Clearance surveys shall adhere to the current United States Fish and Wildlife Service clearance survey protocols described in the Desert Tortoise Field Manual, including a minimum of two clearance passes to be completed after desert tortoise-proof fencing is installed, which shall coincide with heightened desert tortoise activity from late March through May and September through October or as outlined in the Project's Habitat Conservation Plan or Incidental Take Permit. The Designated Biologist(s) shall perform pre activity surveys for desert tortoise and shall remain on-site daily until the construction period ends or exclusion fencing has been installed to preclude desert tortoises from entering a given work area (work area is completely enclosed with exclusionary fence). The Designated Biologist will remain available even after the fence is installed and be called to the site if a tortoise or Mohave ground squirrel is found inside the fence, emphasizing in the tortoise awareness program that only agency authorized biologists, not construction workers, are allowed to handle tortoises. The Designated Biologist shall monitor the exclusionary fence on a weekly basis after its installation to ensure its integrity and function are maintained until the end of construction. United States Fish and Wildlife Service and California Department of Fish and Wildlife may impose modified or additional fencing requirements in the project's final 2081 Permit and/or Habitat Conservation Plan, if required.
- d. If a desert tortoise or Mohave ground squirrel is found on the site during project construction, operation, or decommissioning, activity shall cease in the vicinity of the animal and the desert tortoise and/or Mohave ground squirrel shall be passively restricted to the area encompassing its observed position on the construction site and its point of entry shall be determined if possible. The Lead Biologist shall install a temporary tortoise-proof fence around this area. Concurrent with this effort, United States Fish and Wildlife Service and California Department of Fish and Wildlife shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the desert tortoise and/or Mohave ground squirrel is observed leaving the site, work in the area can resume. A report shall be prepared by the Lead Biologist to document the activities of the desert tortoise and/or Mohave ground squirrel within the site; all fence construction, modification, and repair efforts; and movements of the desert tortoise and/or Mohave ground squirrel once again outside the permanent desert tortoise-proof fence. This report shall be submitted to wildlife and resource agency

representatives, the Kern County Planning and Natural Resources Department. If passive relocation is not possible, desert tortoise and/or Mohave ground squirrel may also be translocated in accordance with a United States Fish and Wildlife Service and/or California Department of Fish and Wildlife approved Translocation Plan.

- e. Outside permanently fenced desert tortoise exclusion areas where desert tortoise may be present, the project operator shall limit the areas of disturbance in desert tortoise and Mohave ground squirrel habitat. Parking areas, new roads, pulling sites, and locations for staging, storage, excavation, and disposal shall be confined to the smallest areas possible. These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.
- f. The Lead Biologist or biological monitor shall monitor any ground-disturbance activities that occur where desert tortoise may be present outside the desert tortoise exclusion fencing. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours where desert tortoise are determined to be present.

MM 4.4-9KC: The project operator and/or contractor shall implement the following during project decommissioning:

- a. All applicable construction phase general protection measures shall be implemented during decommissioning.
- b. A 15-mile-per-hour speed limit on paved or stabilized unpaved roads shall be applied for travel during decommissioning activities. Travel shall be confined to existing roads and previously disturbed areas.
- c. If any special-status wildlife is detected in the work area during decommissioning activities, no work shall be conducted until the individual moves on its own outside of the work area.
- d. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours.

MM 4.4-10KC: During construction the project operator and/or contractor shall implement the following general avoidance and protective measures:

- a. The Lead Biologist or biological monitor shall monitor all ground-disturbance activities. Work shall only occur during daylight hours as practicable. Specialized testing activities and/or continuous operations (i.e., well drilling) may be conducted at night when necessary. Prior to conducting vegetation removal or grading activities inside the fenced area, a Lead Biologist or biological monitor under the supervision of a Lead Biologist shall survey the area immediately prior to conducting these activities to ensure that no listed or special-status animals or plants are present. The project Lead Biologist shall have the right to halt all

activities that are in violation of the special species protection measures. Work shall proceed only after hazards to special species are removed and the species is no longer at risk. The project biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.

- b. At the end of each workday, the Lead Biologist or Qualified Biologist shall ensure that all trenches, bores, and other excavations outside the permanently fenced area in suitable habitat for desert tortoise have been inspected for the presence of desert tortoise and backfilled, if no tortoise is present. If backfilling is not feasible, these excavations shall be modified to ensure that they cannot potentially entrap desert tortoises (e.g., equipped with escape ramps, covered to prevent access, enclosed with a desert tortoise exclusion fence). All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of four inches or greater shall be thoroughly inspected for listed and special-status wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status animal is discovered inside a pipe that section of pipe shall not be moved until the animal has moved off on its own. If the animal does not move in a timely manner, then the appropriate resource agency shall be consulted.
- c. Any construction pipe, culvert, or similar structure stored within desert tortoise habitat (i.e., outside areas with desert tortoise exclusion fencing) shall be inspected for desert tortoise before the material is moved, buried, or installed.
- d. Water used for dust abatement shall be minimized, as allowed by Kern County Engineering, Surveying, and Permit Services Department, or managed in such a manner as to prevent the formation of puddles that could attract common ravens, predators, and other wildlife species to or near the site.
- e. No vehicle or equipment parked outside the fenced areas shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of desert tortoise. If present, the desert tortoise shall be left to move on its own.
- f. Vehicular traffic to and from the project site shall use existing routes of travel (e.g., State Route 14). Cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicle speeds within the project site shall not exceed 25 miles per hour on roads within desert tortoise habitat.
- g. All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Lead Biologist shall be informed of any hazardous spills immediately and hazardous spills shall be cleaned up as soon as practical and the contaminated soil shall be properly disposed of at a licensed facility.
- h. A long-term trash abatement program shall be established for construction, operations, and decommissioning. Trash and food items shall be contained in

closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

- i. Workers shall be prohibited from bringing pets and firearms to the project and from feeding wildlife.
- j. Intentional killing or collection of wildlife species, including both listed species and not listed species, in the project site and surrounding areas shall be prohibited. The Lead Biologist, wildlife and resource agency representatives, and Kern County Planning and Natural Resources Department shall be notified of any such occurrences within 24 hours.
- k. Construction monitoring shall be conducted by either the Lead Biologist or by biological monitors under the Lead Biologist's supervision. The biological monitors shall have experience in monitoring for special-status wildlife.
- l. During construction, daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report for the wildlife and resource agencies and Kern County Planning and Natural Resources Department on a monthly basis, documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall biological resources-related activities conducted, including the worker awareness training, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities.

MM 4.4-11KC: The introduction of exotic plant species shall be avoided and controlled wherever possible, and may be achieved through physical or chemical removal and prevention. Preventing exotic plants from entering the site via vehicular sources shall include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming and going from the site. Earthmoving equipment shall be cleaned prior to transport to the project site. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means.

MM 4.4-12KC: Prior to construction, the project operator and/or contractor shall retain a qualified biologist or botanist to conduct preconstruction rare plant surveys(s) in areas identified as potentially suitable habitat for Barstow woolly sunflower and/or Mojave spineflower within the Kudu project site during the appropriate blooming period in accordance with the guidelines established by the California Department of Fish and Wildlife. If Barstow woolly sunflower and/or Mojave spineflower is not observed during the survey, no further action is required.

- a. If Barstow woolly sunflower and/or Mojave spineflower is observed within the project footprint during preconstruction surveys, the qualified biologist/botanist shall delay ground-disturbing activities, mark or fence the population(s) identified

for avoidance, and contact California Department of Fish and Wildlife for consultation. The proposed project shall be designed by the Lead Biologist, to reduce impacts to the species through the establishment of preservation areas and buffers. If avoidance or minimization measures are implemented on-site, a Habitat Mitigation Plan shall be developed to ensure adequate management and conservation of botanical resources on-site over the long term. A copy of the Habitat Mitigation Plan shall be submitted to the Kern County Planning and Natural Resources Department.

- b. If Barstow woolly sunflower and/or Mojave spineflower is detected during preconstruction surveys, and impacts cannot be avoided, the Habitat Mitigation Plan would also include the following:
 1. A figure illustrating the area of the population(s) to be preserved, and the area of the population(s) to be removed;
 2. Identification of on-site or off-site preservation, restoration, or enhancement location(s);
 3. Methods for preservation, restoration, enhancement, and/or population translocation;
 4. A replacement ratio and success standard of 1:1 for occupied habitat(s) lost unless a lower mitigation ratio and/or alternative mitigation is agreed to in coordination with California Department of Fish and Wildlife;
 5. A five-year monitoring program to ensure mitigation success;
 6. Adaptive management and remedial measures in the event that performance standards are not achieved; and
 7. Financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.

MM 4.4-13KC: Prior to the issuance of grading or building permits, the project operator shall:

- a. Provide evidence to the Kern County Planning and Natural Resources Department that consultation with the Kern County Agricultural Commissioner has taken place regarding removal of plants protected under the California Desert Native Plants Act;
- b. If the Agricultural Commissioner determines that a permit is not required, the project operator shall provide a letter describing the consultation process and Agricultural Commissioner's determinations, indicating that such authorization is not required. The letter shall also identify the Agricultural Commissioner's points of contact and contact information;
- c. If required by the Agricultural Commissioner, the project operator shall provide evidence to the Kern County Planning and Natural Resources Department that a California Desert Native Plant removal permit has been obtained.

MM 4.4-14KC: The following measures shall be implemented to reduce direct impacts to sensitive natural communities. To the extent feasible, the following avoidance and minimization measures shall be implemented:

- a. Where feasible, the project shall be designed to avoid disturbance of Creosote Bush – White Bursage – Desert Senna Scrub (*Larrea tridentata* – *Ambrosia dumosa* – *Senna armata*) Association.
- b. Where it is not feasible to avoid direct impacts to sensitive natural communities, the project operator shall implement the following measures:
 1. Compensatory mitigation for impacts to sensitive natural communities shall occur either on-site or off-site and would occur at a ratio no less than 1:1 for each sensitive natural community impacted. A Habitat Mitigation and Monitoring Plan shall be prepared or the impacts to sensitive natural communities shall be addressed in the Project’s Incidental Take Permit or Lake and Streambed Alteration Agreement during coordination with the California Department of Fish and Wildlife.
 2. If on-site mitigation is proposed, the Habitat Mitigation and Monitoring Plan shall identify those portions of the site that contain suitable characteristics for restoration or enhancement of sensitive habitat. Determination of mitigation adequacy shall be based on comparison of the restored or enhanced habitat with similar, undisturbed habitat in the vicinity of the development site. If mitigation is implemented off-site, compensatory lands shall contain similar or more well-developed habitat and preferably be located in the vicinity of the site or watershed. Off-site land shall be preserved through a conservation easement and the Plan shall identify an approach for funding assurance for the long-term management of the compensatory land.
- c. Where direct impacts to Western Joshua trees are unavoidable, if Western Joshua tree is listed as a ‘candidate,’ ‘threatened,’ or ‘endangered’ species under the California Endangered Species Act at the time of issuance of a building or grading permit in areas that would involve the removal of Western Joshua trees, the project proponent may pursue one of the following mitigation options:
 1. The project operator shall provide evidence to the Kern County Planning and Natural Resources Department demonstrating that impacts to Western Joshua tree have been mitigated in accordance with Section 2084 of the California Fish and Game Code; or
 2. The project operator shall mitigate for permanent impacts to Western Joshua tree, should an Incidental Take Permit be required from California Department of Fish and Wildlife, through an approved mitigation bank, in-lieu fee program, or other California Department of Fish and Wildlife -approved process. Compensatory mitigation for permanent impacts to Western Joshua tree shall be determined and acquired in consultation with the wildlife or resource agency. Verification of compliance shall be submitted to the Kern

County Planning and Natural Resources prior to project construction in areas that would involve removal of Western Joshua trees.

MM 4.4-15KC: The measures listed below shall be implemented prior to and during construction, operations, and decommissioning at the project site.

- a. The project operator has filed for an Incidental Take Permit for Mohave ground squirrel and desert tortoise with California Department of Fish and Wildlife. The project operator shall mitigate for permanent impacts to suitable desert tortoise and/or Mohave ground squirrel habitat, through an approved mitigation bank, in-lieu fee program, or other mechanism accepted by California Department of Fish and Wildlife, as outlined in the agency's permit. Compensatory mitigation acreage for permanent impacts to nesting, occupied, and satellite burrows and/or habitat shall be determined and acquired in consultation with the wildlife or resource agency. Compensatory mitigation would provide habitat for desert tortoise and Mohave ground squirrel, as well as rare plants and State Waters (only if impacted by the project). Verification of compliance shall be submitted to the Kern County Planning and Natural Resources Department prior to the onset of activities that have the potential to impact covered species.
- b. Prepare a Habitat Mitigation and Monitoring Plan (if required, should an incidental take permit be required for the project) or provide a copy of the project's incidental take permit that outlines all project compensatory mitigation for desert tortoise, and Mohave ground squirrel, in coordination with the California Department of Fish and Wildlife.
 1. Compensatory mitigation shall provide ecological benefits to covered species that are similar to or better than the project's impacts on covered species. Mitigation sites in the vicinity of the project are preferable.
 2. Mitigation shall meet California Department of Fish and Wildlife's durability requirements.
 3. The plan, or incidental take permit, shall identify conservation actions, where applicable, to demonstrate that the compensatory lands are managed to provide durable environmental benefits to the covered species.
 4. The plan, or incidental take permit, shall identify an approach for funding assurance for the long term management of the conserved land.

MM 4.4-16KC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.

- a. A project Lead Biologist shall be on-site during all construction activities in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows not more than 14 days prior to ground disturbance and/or prior to desert tortoise exclusion fencing installation.

The survey methodology shall be consistent with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls (and may be combined with other preconstruction surveys). As burrows are searched, biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to California Department of Fish and Wildlife and Kern County Planning and Natural Resources Department.

- b. If no burrowing owls are detected, no further mitigation is necessary. If burrowing owls are detected, no ground-disturbing activities, such as road construction or installation of solar arrays or ancillary facilities, shall be permitted within the distances specified in Table 2 of the Staff Report from an active burrow during the nesting and fledging seasons (April 1 to August 15 and August 16 to October 15, respectively), unless otherwise authorized by California Department of Fish and Wildlife. The specified buffer distance ranges from 656 feet to 1,640 feet, according to the time of year and the level of disturbance. Buffers shall be established in accordance with Table 4.4-6, *Burrowing Owl Burrow Buffers*, below, and occupied burrows shall not be disturbed during the nesting season unless a qualified biologist approved by California Department of Fish and Wildlife, verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season (April 1 to October 15) or as outlined in the Project's Habitat Conservation Plan or Incidental Take Permit.
- c. During the nonbreeding (winter) season (October 16 to March 31), consistent with the table below (*Burrowing Owl Burrow Buffers*), all ground-disturbing work shall maintain a distance ranging from 164 feet to 1,640 feet from any active burrows depending on the level of disturbance. If active winter burrows are found that would be directly affected by ground-disturbing activities, owls can be displaced from winter burrows according to recommendations made in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012).

Table 4.4-6. Burrowing Owl Burrow Buffers

Location	Time of Year	Level of Disturbance (in feet)		
		Low	Medium	High
Nesting Sites	April 1-Aug 15	656	1,640	1,640
Nesting Sites	Aug 16 - Oct 15	656	656	1,640
Any occupied burrow	Oct 16 - Mar 31	164	328	1,640

Source: California Department of Fish and Game 2012

- d. Burrowing owls should not be excluded from burrows unless or until a Burrowing Owl Exclusion Plan is developed by the Lead Biologist and approved by the applicable local California Department of Fish and Wildlife office and submitted

to the Kern County Planning and Natural Resources Department. The plan shall include, at a minimum:

1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
 2. Type of scope to be used and appropriate timing of scoping to avoid impacts;
 3. Occupancy factors to look for and what shall guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape, i.e., look for sign immediately inside the door).
 4. How the burrow(s) shall be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
 5. Removal of other potential owl burrow surrogates or refugia on-site;
 6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;
 7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take;
 8. How the impacted site shall continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.
 9. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion shall occur immediately after the end of the breeding season.
 10. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).
- e. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or heavy material shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation.
- f. During construction and decommissioning activities, monthly and final compliance reports shall be provided to California Department of Fish and

Wildlife, Kern County Planning and Natural Resources Department, and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.

MM 4.4-17KC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls:

- a. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented off-site in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) and in consultation with California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented:
 1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including de-compacting soil and revegetating.
 2. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include:

Permanent conservation or enhancement of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals.
 3. Permanently protect or enhance mitigation land through coordination with California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits.
- b. Develop and implement a mitigation land management plan in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.
 1. Fund the maintenance, management, preservation, or enhancement of mitigation land.
 2. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
 3. Mitigation lands or California Department of Fish and Wildlife-approved habitat enhancement projects should be on, adjacent or proximate to the impact

site where possible and where habitat is sufficient to support burrowing owls present.

4. Consult with the California Department of Fish and Wildlife when determining off-site mitigation.

MM 4.4-18KC: Prior to the issuance of grading or building permits the following shall be implemented:

- a. Preconstruction surveys shall be conducted by a qualified biologist for the presence of desert kit fox and American badger dens prior to installation of desert tortoise exclusion fencing. Copies of the completed surveys shall be submitted to Kern County Planning and Natural Resources Department.
- b. The survey shall be conducted in areas of suitable habitat for American badger and desert kit fox, which includes fallow agricultural land and scrub habitats. Surveys shall not be conducted for all areas of suitable habitat at one time; they shall be phased so that surveys occur within two weeks prior to disturbance of that portion of the project site. If no potential American badger or desert kit fox dens are present, no further mitigation is required.
- c. If potential dens are observed, the following measures are required to avoid potential adverse effects to American badger and desert kit fox:
 1. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers or foxes from reuse during construction. Den excavation shall be prohibited during the pupping season to avoid possible pup mortality resulting from a lack of available refugia.
 2. Passive relocation shall be prohibited during the pupping season, which is February 15 to June 1 for both species. If the qualified biologist determines that potential dens outside the breeding season may be active, the biologist shall notify the California Department of Fish and Wildlife. Entrances to the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers and foxes have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction. The collapsing of active desert kit fox dens shall not occur without prior consultation with the California Department of Fish and Wildlife. A biologist shall remain on-call throughout construction in the event that badger or desert kit fox are present on the site.
 3. Construction activities shall not occur within 50 feet of active badger dens. The project operator shall contact California Department of Fish and Wildlife immediately if natal badger dens are detected to determine suitable buffers and other measures to avoid take.

4. Construction activities shall not occur within 100 feet of active kit fox dens. The project operator shall contact California Department of Fish and Wildlife immediately if pupping kit fox dens are detected to determine suitable buffers and other measures to avoid take.

MM 4.4-19KC: Not more than 14 days prior to site clearing and/or ground disturbance, a qualified biologist shall conduct a preconstruction avian nesting survey. Copies of the completed surveys shall be submitted to Kern County Planning and Natural Resources Department. The surveys shall be conducted as follows:

- a. Surveys shall not be conducted for an entire project site at one time; they shall be phased so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site—this includes ground-nesting species (e.g., burrowing owl).
- b. If construction is scheduled to occur during the non-nesting season (August 2 to January 31), no preconstruction surveys for birds or additional measures are required.
- c. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 14 days or more in construction activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again.
- d. If active nests are found within a 250-foot, no-disturbance buffer (or as otherwise determined in consultation with California Department of Fish and Wildlife) shall be created around the active nests. If the nest(s) are found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified wildlife biologist has determined that the birds have fledged or by relocating the project component(s) to avoid the area.
- e. All vertical tubes used in project construction, such as solar mounts and chain link fencing poles shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of special-status birds.

MM 4.4-20KC: Prior to issuance of a grading or building permit, the project operator shall submit written documentation to the Kern County Planning and Natural Resources Department verifying that all power lines are designed in accordance with Avian Power Line Interaction Committee Guidelines. The project operator shall conform to the latest practices (as outlined in the 2006 Avian Power Line Interaction Committee Guidelines document) to protect birds from electrocution and collision.

MM 4.4-21KC: The project operator shall develop a site-specific Common Raven Management Plan in accordance with United States Fish and Wildlife Service guidelines and shall

implement management measures for ravens in the project area. These measures may include but are not limited to designing structures to eliminate perches, waste management, roadkill management, management of ponded water during construction and operations, and nest removal on structures within the photovoltaic solar facility site and along the transmission line.

City of California City:

Implement Mitigation Measure MM 4.1-5CC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), regarding compliance with the Kern County Dark Skies Ordinance, and the following:

MM 4.4-1CC: Prior to the issuance of grading or building permits, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by California Department of Fish and Wildlife to oversee compliance with protection measures for all listed and other special-status species. The project Lead Biologist shall be on-site during all fencing and ground disturbance activities throughout the construction phase. The project Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures described herein. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The project Lead Biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.

MM 4.4-2CC: Prior to the issuance of grading or building permits, and for the duration of construction activities, all new construction workers at the project site shall attend a Worker Environmental Awareness Program, developed and presented by the project Lead Biologist. As part of the Worker Environmental Awareness Program training, the project Lead Biologist shall perform the following training-related tasks:

- a. Provide the training materials for Worker Environmental Awareness Program training. These materials shall include the measures and mitigation requirements for protected plant and wildlife species (e.g., avoidance and buffer requirements, nighttime construction limitations), and applicable fire protection measures. Worker Environmental Awareness Program training shall also include driver training to avoid and minimize collision risks with protected species, and reporting protocols in the event that any dead or injured wildlife are discovered.
- b. Send a copy of all Worker Environmental Awareness Program training materials to the California City Community Development Department.
- c. Maintain a list on-site of all employees who have undergone Worker Environmental Awareness Program training. A copy of this list shall be provided to the California City Community Development Department, as necessary.

MM 4.4-3CC: The Worker Environmental Awareness Program shall be presented by the Lead Biologist and shall include information on the life history of each federal and state-listed species, as well as other special-status wildlife, natural communities, and plant species that may be encountered during construction activities, their legal protections,

the definition of “take” under the federal and state Endangered Species Acts, measures the project operator is implementing to protect special-status species, reporting requirements, specific measures that each worker shall employ to avoid take of special-status wildlife species, and penalties for violation of the acts. Training shall be documented as follows:

- a. An acknowledgement form signed by each worker indicating that environmental training has been completed.
- b. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are in possession of hard hats with the required sticker.
- c. A copy of the training transcript/training video and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgements forms shall be submitted to the California City Community Development Department.

MM 4.4-4CC: During construction and decommissioning the anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with stakes and flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. The construction crews and contractor(s) shall be held responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits.

MM 4.4-5CC: New and existing roads that are planned for either construction or widening shall not extend beyond the planned impact area. All vehicles passing or turning around shall do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, a biological resources survey shall be conducted by the Lead Biologist or by biological monitor(s) under the Lead Biologist’s supervision to determine if listed or special-status species would be impacted. Impacts shall be avoided to the maximum extent practicable or shall be fully mitigated for. Construction shall not begin until the route is cleared for biological resources. The route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction and use.

MM 4.4-6CC: Spoils shall be stockpiled in areas disturbed by the project. Stockpile areas shall be marked to define the limits where stockpiling can occur. Standard best management practices shall be employed to prevent loss of habitat due to erosion caused by project-related impacts (i.e., grading or clearing for new roads). All detected erosion shall be remedied within two days of discovery.

MM 4.4-7CC: All ground-disturbing construction and decommissioning activities shall be monitored by the qualified Lead Biologist or by biological monitors under the Lead Biologist’s supervision to ensure compliance with avoidance and minimization measures.

MM 4.4-8CC: During construction and decommissioning the project operator and/or contractor shall implement the following general avoidance and protective measures:

- a. Prior to issuance of grading or building permits but after consulting with the United States Fish and Wildlife Service and California Department of Fish and Wildlife, the solar facility project site (east of State Route 14 for the Kudu Solar site) shall be fenced with a permanent desert tortoise exclusion fence to keep any desert tortoises that may be using habitat adjacent to the facility from entering during construction, operations and maintenance, and dismantling and restoration (decommissioning) phases. The project proponent shall submit a fencing plan that outlines the location, type of fence, and construction methods to United States Fish and Wildlife Service and California Department of Fish and Wildlife for review. The fencing type shall follow current fence specifications established by the United States Fish and Wildlife Service. Desert tortoise-proof gates or guards shall be established at all photovoltaic solar facility entry points, unless otherwise approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife. Workers installing the exclusion fencing shall have undergone the worker training program mandated in Mitigation Measure MM 4.4-2CC and a biological monitor under the authority of the project Lead Biologist shall be present during exclusion fencing installation.
- b. The fencing shall be routinely inspected after precipitation events of more than one inch at each ephemeral drainage crossing. Any damage to the fencing shall be repaired immediately or no later than 2 days following the observation.
- c. Following the construction of desert tortoise exclusion fencing around the solar facility perimeters, clearance surveys shall be conducted by the Lead Biologist to ensure that no desert tortoises, Mohave ground squirrels, or other listed wildlife species are trapped within the fenced area. The Lead Biologist may be assisted by biological monitors under the supervision of the Lead Biologist. The clearance surveys shall be conducted no more than 30 days prior to ground disturbing activities associated with construction, operations and maintenance, or decommissioning. Clearance surveys shall adhere to the current United States Fish and Wildlife Service clearance survey protocols described in the Desert Tortoise Field Manual, including a minimum of two clearance passes to be completed after desert tortoise-proof fencing is installed, which shall coincide with heightened desert tortoise activity from late March through May and September through October or as outlined in the Project's Habitat Conservation Plan or Incidental Take Permit. The Designated Biologist(s) shall perform pre activity surveys for desert tortoise and shall remain on-site daily until the construction period ends or exclusion fencing has been installed to preclude desert tortoises from entering a given work area (work area is completely enclosed with exclusionary fence). The Designated Biologist will remain available even after the fence is installed and be called to the site if a tortoise or Mohave ground squirrel is found inside the fence, emphasizing in the tortoise awareness program that only agency authorized biologists, not construction workers, are allowed to handle tortoises. The Designated Biologist shall monitor the exclusionary fence on a weekly basis after

its installation to ensure its integrity and function are maintained until the end of construction. United States Fish and Wildlife Service and California Department of Fish and Wildlife may impose modified or additional fencing requirements in the project's final 2081 Permit and/or Habitat Conservation Plan, if required.

- d. If a desert tortoise or Mohave ground squirrel is found on the site during project construction, operation, or decommissioning, activity shall cease in the vicinity of the animal and the desert tortoise and/or Mohave ground squirrel shall be passively restricted to the area encompassing its observed position on the construction site and its point of entry shall be determined if possible. The Lead Biologist shall install a temporary tortoise-proof fence around this area. Concurrent with this effort, United States Fish and Wildlife Service and California Department of Fish and Wildlife shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the desert tortoise and/or Mohave ground squirrel is observed leaving the site, work in the area can resume. A report shall be prepared by the Lead Biologist to document the activities of the desert tortoise and/or Mohave ground squirrel within the site; all fence construction, modification, and repair efforts; and movements of the desert tortoise and/or Mohave ground squirrel once again outside the permanent desert tortoise-proof fence. This report shall be submitted to wildlife and resource agency representatives, the California City Community Development Department. If passive relocation is not possible, desert tortoise and/or Mohave ground squirrel may also be translocated in accordance with a United States Fish and Wildlife Service and/or California Department of Fish and Wildlife approved Translocation Plan.
- e. Outside permanently fenced desert tortoise exclusion areas where desert tortoise may be present, the project operator shall limit the areas of disturbance in desert tortoise and Mohave ground squirrel habitat. Parking areas, new roads, pulling sites, and locations for staging, storage, excavation, and disposal shall be confined to the smallest areas possible. These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.
- f. The Lead Biologist or biological monitor shall monitor any ground-disturbance activities that occur where desert tortoise may be present outside the desert tortoise exclusion fencing. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours where desert tortoise are determined to be present.

MM 4.4-9CC: The project operator and/or contractor shall implement the following during project decommissioning:

- a. All applicable construction phase general protection measures shall be implemented during decommissioning.

- b. A 15-mile-per-hour speed limit on paved or stabilized unpaved roads shall be applied for travel during decommissioning activities. Travel shall be confined to existing roads and previously disturbed areas.
- c. If any special-status wildlife is detected in the work area during decommissioning activities, no work shall be conducted until the individual moves on its own outside of the work area.
- d. Work outside areas with desert tortoise exclusion fencing shall only occur during daylight hours.

MM 4.4-10CC: During construction the project operator and/or contractor shall implement the following general avoidance and protective measures:

- a. The Lead Biologist or biological monitor shall monitor all ground-disturbance activities. Work shall only occur during daylight hours as practicable. Specialized testing activities and/or continuous operations (i.e., well drilling) may be conducted at night when necessary. Prior to conducting vegetation removal or grading activities inside the fenced area, a Lead Biologist or biological monitor under the supervision of a Lead Biologist shall survey the area immediately prior to conducting these activities to ensure that no listed or special-status animals or plants are present. The project Lead Biologist shall have the right to halt all activities that are in violation of the special species protection measures. Work shall proceed only after hazards to special species are removed and the species is no longer at risk. The project biologist shall have in her/his possession a copy of all the compliance measures while work is being conducted on-site.
- b. At the end of each workday, the Lead Biologist or Qualified Biologist shall ensure that all trenches, bores, and other excavations outside the permanently fenced area in suitable habitat for desert tortoise have been inspected for the presence of desert tortoise and backfilled, if no tortoise is present. If backfilling is not feasible, these excavations shall be modified to ensure that they cannot potentially entrap desert tortoises (e.g., equipped with escape ramps, covered to prevent access, enclosed with a desert tortoise exclusion fence). All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of four inches or greater shall be thoroughly inspected for listed and special-status wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status animal is discovered inside a pipe that section of pipe shall not be moved until the animal has moved off on its own. If the animal does not move in a timely manner, then the appropriate resource agency shall be consulted.
- c. Any construction pipe, culvert, or similar structure stored within desert tortoise habitat (i.e., outside areas with desert tortoise exclusion fencing) shall be inspected for desert tortoise before the material is moved, buried, or installed.

- d. Water used for dust abatement shall be minimized, as allowed by California City Community Development Department, or managed in such a manner as to prevent the formation of puddles that could attract common ravens, predators, and other wildlife species to or near the site.
- e. No vehicle or equipment parked outside the fenced areas shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of desert tortoise. If present, the desert tortoise shall be left to move on its own.
- f. Vehicular traffic to and from the project site shall use existing routes of travel (e.g., State Route 14). Cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicle speeds within the project site shall not exceed 25 miles per hour on roads within desert tortoise habitat.
- g. All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Lead Biologist shall be informed of any hazardous spills immediately and hazardous spills shall be cleaned up as soon as practical and the contaminated soil shall be properly disposed of at a licensed facility.
- h. A long-term trash abatement program shall be established for construction, operations, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.
- i. Workers shall be prohibited from bringing pets and firearms to the project and from feeding wildlife.
- j. Intentional killing or collection of wildlife species, including listed species, in the project site and surrounding areas shall be prohibited. The Lead Biologist, wildlife and resource agency representatives, and California City Community Development Department shall be notified of any such occurrences within 24 hours.
- k. Construction monitoring shall be conducted by either the Lead Biologist or by biological monitors under the Lead Biologist's supervision. The biological monitors shall have experience in monitoring for special-status wildlife.
- l. During construction, daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report for the wildlife and resource agencies and California City Community Development Department on a monthly basis, documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall biological resources-related activities conducted, including the worker awareness training, clearance/pre-activity

surveys, monitoring activities, and any observed special-status species, including injuries and fatalities.

MM 4.4-11CC: The introduction of exotic plant species shall be avoided and controlled wherever possible, and may be achieved through physical or chemical removal and prevention. Preventing exotic plants from entering the site via vehicular sources shall include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming and going from the site. Earthmoving equipment shall be cleaned prior to transport to the project site. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means.

MM 4.4-12CC: Prior to construction, the project operator and/or contractor shall retain a qualified biologist or botanist to conduct preconstruction rare plant surveys(s) in areas identified as potentially suitable habitat for Barstow woolly sunflower and/or Mojave spineflower within the Kudu project site during the appropriate blooming period in accordance with the guidelines established by the California Department of Fish and Wildlife. If Barstow woolly sunflower and/or Mojave spineflower is not observed during the survey, no further action is required.

- a. If Barstow woolly sunflower and/or Mojave spineflower is observed within the project footprint during preconstruction surveys, the qualified biologist/botanist shall delay ground-disturbing activities, mark or fence the population(s) identified for avoidance, and contact California Department of Fish and Wildlife for consultation. The proposed project shall be designed by the Lead Biologist, to reduce impacts to the species through the establishment of preservation areas and buffers. If avoidance or minimization measures are implemented on-site, a Habitat Mitigation Plan shall be developed to ensure adequate management and conservation of botanical resources on-site over the long term. A copy of the Habitat Mitigation Plan shall be submitted to the California City Community Development Department.
- b. If Barstow woolly sunflower and/or Mojave spineflower is detected during preconstruction surveys, and impacts cannot be avoided, the Habitat Mitigation Plan would also include the following:
 1. A figure illustrating the area of the population(s) to be preserved, and the area of the population(s) to be removed;
 2. Identification of on-site or off-site preservation, restoration, or enhancement location(s);
 3. Methods for preservation, restoration, enhancement, and/or population translocation;
 4. A replacement ratio and success standard of 1:1 for occupied habitat(s) lost unless a lower mitigation ratio and/or alternative mitigation is agreed to in coordination with California Department of Fish and Wildlife;

5. A five-year monitoring program to ensure mitigation success;
6. Adaptive management and remedial measures in the event that performance standards are not achieved; and
7. Financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.

MM 4.4-13CC: Prior to the issuance of grading or building permits, the project operator shall:

- a. Provide evidence to the California City Community Development Department that consultation with the Kern County Agricultural Commissioner has taken place regarding removal of plants protected under the California Desert Native Plant Act;
- b. If the Agricultural Commissioner determines that a permit is not required, the project operator shall provide a letter describing the consultation process and Commissioner's determinations, indicating that such authorization is not required. The letter shall also identify the Commissioner's points of contact and contact information;
- c. If required by the Agricultural Commissioner, the project operator shall provide evidence to the California City Community Development Department that a California Desert Native Plant Act removal permit has been obtained.

MM 4.4-14CC: The measures listed below shall be implemented prior to and during construction, operations, and decommissioning at the project site.

- a. The project operator has filed for an Incidental Take Permit for Mohave ground squirrel and desert tortoise with California Department of Fish and Wildlife. The project operator shall mitigate for permanent impacts to suitable desert tortoise and/or Mohave ground squirrel habitat, through an approved mitigation bank, in-lieu fee program, or other mechanism accepted by California Department of Fish and Wildlife, as outlined in the agency's permit. Compensatory mitigation acreage for permanent impacts to nesting, occupied, and satellite burrows and/or habitat shall be determined and acquired in consultation with the wildlife or resource agency. Compensatory mitigation would provide habitat for desert tortoise and Mohave ground squirrel, as well as rare plants and State Waters (only if impacted by the project). Verification of compliance shall be submitted to the California City Community Development Department prior to the onset of activities that have the potential to impact covered species.
- b. Prepare a Habitat Mitigation and Monitoring Plan (if required, should an incidental take permit be required for the project) or provide a copy of the project's incidental take permit that outlines all project compensatory mitigation for desert tortoise, and Mohave ground squirrel, in coordination with the California Department of Fish and Wildlife.

1. Compensatory mitigation shall provide ecological benefits to covered species that are similar to or better than the projects impacts on covered species. Mitigation sites in the vicinity of the project are preferable.
2. Mitigation shall meet California Department of Fish and Wildlife's durability requirements.
3. The plan, or incidental take permit, shall identify conservation actions, where applicable, to demonstrate that the compensatory lands are managed to provide durable environmental benefits to the covered species.
4. The plan, or incidental take permit, shall identify an approach for funding assurance for the long-term management of the conserved land.

MM 4.4-15CC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.

- a. A project Lead Biologist shall be on-site during all construction activities in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows not more than 14 days prior to ground disturbance and/or prior to desert tortoise exclusion fencing installation. The survey methodology shall be consistent with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls (and may be combined with other preconstruction surveys). As burrows are searched, biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to California Department of Fish and Wildlife and California City Community Development Department.
- b. If no burrowing owls are detected, no further mitigation is necessary. If burrowing owls are detected, no ground-disturbing activities, such as road construction or installation of solar arrays or ancillary facilities, shall be permitted within the distances specified in Table 2 of the Staff Report from an active burrow during the nesting and fledging seasons (April 1 to August 15 and August 16 to October 15, respectively), unless otherwise authorized by California Department of Fish and Wildlife. The specified buffer distance ranges from 656 feet to 1,640 feet, according to the time of year and the level of disturbance. Buffers shall be established in accordance with Table 4.4-6, *Burrowing Owl Burrow Buffers*, below, and occupied burrows shall not be disturbed during the nesting season unless a qualified biologist approved by California Department of Fish and Wildlife, verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season (April 1

to October 15) or as specified by the Incidental Take Permit issued by California Department of Fish and Wildlife.

- c. During the nonbreeding (winter) season (October 16 to March 31), consistent with the table below (*Burrowing Owl Burrow Buffers*), all ground-disturbing work shall maintain a distance ranging from 164 feet to 1,640 feet from any active burrows depending on the level of disturbance. If active winter burrows are found that would be directly affected by ground-disturbing activities, owls can be displaced from winter burrows according to recommendations made in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012).

Table 4.4-7. Burrowing Owl Burrow Buffers

Location	Time of Year	Level of Disturbance (in feet)		
		Low	Medium	High
Nesting Sites	April 1-Aug 15	656	1,640	1,640
Nesting Sites	Aug 16 - Oct 15	656	656	1,640
Any occupied burrow	Oct 16 - Mar 31	164	328	1,640

Source: California Department of Fish and Game 2012

- d. Burrowing owls should not be excluded from burrows unless or until a Burrowing Owl Exclusion Plan is developed by the Lead Biologist and approved by the applicable local California Department of Fish and Wildlife office and submitted to the California City Community Development Department. The plan shall include, at a minimum:
 1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
 2. Type of scope to be used and appropriate timing of scoping to avoid impacts;
 3. Occupancy factors to look for and what shall guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape, i.e., look for sign immediately inside the door).
 4. How the burrow(s) shall be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
 5. Removal of other potential owl burrow surrogates or refugia on-site;
 6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;

7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take;
 8. How the impacted site shall continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.
 9. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion shall occur immediately after the end of the breeding season.
 10. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).
- e. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or heavy material shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation.
- f. During construction and decommissioning activities, monthly and final compliance reports shall be provided to California Department of Fish and Wildlife, California City Community Development Department, and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.

MM 4.4-16CC: The following measures shall be implemented during project construction and decommissioning activities with respect to burrowing owls.

- a. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented off-site in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) and in consultation with California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented:
 1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including de-compacting soil and revegetating.
 2. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows or burrowing owl impacted are replaced based on a site-specific analysis and shall include:

Permanent conservation or enhancement of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing

- owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals.
3. Permanently protect or enhance mitigation land through coordination with California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits.
- b. Develop and implement a mitigation land management plan in accordance with the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.
1. Fund the maintenance, management, preservation, or enhancement of mitigation land.
 2. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
 3. Mitigation lands or California Department of Fish and Wildlife-approved habitat enhancement projects should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present.
 4. Consult with the California Department of Fish and Wildlife when determining off-site mitigation.

MM 4.4-17CC: Prior to ground disturbance the following shall be implemented:

- a. Preconstruction surveys shall be conducted by a qualified biologist for the presence of desert kit fox and American badger dens prior to installation of desert tortoise exclusion fencing. Copies of the completed surveys shall be submitted to California City Community Development Department.
- b. The survey shall be conducted in areas of suitable habitat for American badger and desert kit fox, which includes fallow agricultural land and scrub habitats. Surveys shall not be conducted for all areas of suitable habitat at one time; they shall be phased so that surveys occur within two weeks prior to disturbance of that portion of the site. If no potential American badger or desert kit fox dens are present, no further mitigation is required.
- c. If potential dens are observed, the following measures are required to avoid potential adverse effects to American badger and desert kit fox:

1. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers or foxes from reuse during construction. Den excavation shall be prohibited during the pupping season to avoid possible pup mortality resulting from a lack of available refugia.
2. Passive relocation shall be prohibited during the pupping season, which is February 15 to June 1 for both species. If the qualified biologist determines that potential dens outside the breeding season may be active, the biologist shall notify the California Department of Fish and Wildlife. Entrances to the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers and foxes have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction. The collapsing of active desert kit fox dens shall not occur without prior consultation with the California Department of Fish and Wildlife. A biologist shall remain on-call throughout construction in the event that badger or desert kit fox are present on the site.
3. Construction activities shall not occur within 50 feet of active badger dens. The project operator shall contact California Department of Fish and Wildlife immediately if natal badger dens are detected to determine suitable buffers and other measures to avoid take.
4. Construction activities shall not occur within 100 feet of active kit fox dens. The project operator shall contact California Department of Fish and Wildlife immediately if pupping kit fox dens are detected to determine suitable buffers and other measures to avoid take.

MM 4.4-18CC: Not more than 14 days prior to site clearing and/or ground disturbance, a qualified biologist shall conduct a preconstruction avian nesting survey. Copies of the completed surveys shall be submitted to California City Community Development Department. The surveys shall be conducted as follows:

- a. Surveys shall not be conducted for an entire project site at one time; they shall be phased so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site—this includes ground-nesting species (e.g., burrowing owl).
- b. If construction is scheduled to occur during the non-nesting season (August 2 to January 31), no preconstruction surveys for birds or additional measures are required.

- c. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 14 days or more in construction activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again.
- d. If active nests are found a 250-foot, no-disturbance buffer (or as otherwise determined in consultation with California Department of Fish and Wildlife) shall be created around the active nests. If the nest(s) are found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified wildlife biologist has determined that the birds have fledged or by relocating the project component(s) to avoid the area.
- e. All vertical tubes used in project construction, such as solar mounts and chain link fencing poles shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of special-status birds.

MM 4.4-19CC: Prior to issuance of a grading or building permit, the project operator shall submit written documentation to the California City Community Development Department verifying that all power lines are designed in accordance with Avian Power Line Interaction Committee Guidelines. The project operator shall conform to the latest practices (as outlined in the 2006 Avian Power Line Interaction Committee Guidelines document) to protect birds from electrocution and collision.

MM 4.4-20CC: The project operator shall develop a site-specific Common Raven Management Plan in accordance with United States Fish and Wildlife Service guidelines and shall implement management measures for ravens in the project area. These measures may include but are not limited to designing structures to eliminate perches, waste management, roadkill management, management of ponded water during construction and operations, and nest removal on structures within the photovoltaic solar facility site and along the transmission line.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.1-5KC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text) and MM 4.4-1KC through MM 4.4-21KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.1-5CC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), MM 4.4-1CC through MM 4.4-20CC, impacts would be less than significant.

Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS.

Solar Facility

Sensitive habitats and vegetation communities are those that are considered rare in the region, support special-status plant or animal species, or receive regulatory protection, including those that are of special concern to resource agencies or are afforded specific consideration through CEQA. In addition, vegetation communities listed by CDFW as having the highest inventory priorities are considered sensitive.

Of the six vegetation communities present on the project site, the creosote bush – white bursage – desert senna scrub association is designated as a sensitive natural community by CDFW. Implementation of the proposed project would result in the direct removal of this sensitive natural community, which would be considered a potentially significant impact without mitigation; however, impacts would be mitigated through the implementation of Mitigation Measure MM 4.4-14KC.

One type of feature that may be subject to the jurisdiction of the RWQCB and CDFW was delineated during field surveys: one intermittent stream. In addition, three ephemeral streams previously mapped in the *Eland I Solar Farm Preliminary Jurisdictional Waters/Wetlands Delineation Report* (Stantec 2018) occur within the project area. Approximately 0.146 acres of potentially jurisdictional features are located within the project area. Construction activities from the proposed project could permanently impact these potentially jurisdictional features as a result of grading and construction of the solar facility, including supporting infrastructure. If complete avoidance of jurisdictional waters is not feasible, impacts to jurisdictional areas would be considered significant but mitigatable through implementation of Mitigation Measures MM 4.4-22KC, MM 4.4-23KC, MM 4.4-21CC, and MM 4.4-22CC.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.4-14KC, and the following:

MM 4.4-22KC: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided to the extent practicable and shall be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board and Kern County Planning and Natural Resources Department. The report shall include information as shown below as a plan as necessary and shall outline compliance to the following:

- a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided to the extent practicable. This may be shown in plan form.
- b. Any material/spoils from project activities should be located away from jurisdictional areas. Jurisdictional areas shall be protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls,

covers, sand/gravel bags, and/or straw bale barriers, as appropriate. Protection measures shall follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan and in the Hazardous Materials Business Plan.

- c. Prior to the start of construction activities, the project proponent/operator shall provide evidence that all fueling, hazardous materials storage areas, and operations and maintenance activities shall be sited at least 100 feet away from on-site drainages and other water features, as identified in the project-specific delineation of wetlands and waters.
- d. Any spillage of hazardous material shall be stopped if it can be done safely. The contaminated area shall be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified.

MM 4.4-23KC: If it is determined during final siting that jurisdictional ephemeral drainages cannot be avoided, the project proponent shall notify the California Department of Fish and Wildlife of potentially jurisdictional features and, if necessary, obtain a Lake and Streambed Alteration Agreement. If waters of the State are impacted, the owner/operator shall notify the Lahontan Regional Water Quality Control Board, and obtain a Waste Discharge Requirement pursuant to the California Porter-Cologne Act, if required.

City of California City

MM 4.4-21CC: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided to the extent practicable and shall be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board and California City Community Development Department. The report shall include information as shown below as a plan as necessary and shall outline compliance to the following:

- a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided to the extent practicable. This may be shown in plan form.
- b. Any material/spoils from project activities should be located away from jurisdictional areas. Jurisdictional areas shall be protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and/or straw bale barriers, as appropriate. Protection measures shall follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan and in the Hazardous Materials Business Plan.

- c. Prior to the start of construction activities, the project proponent/operator shall provide evidence that all fueling, hazardous materials storage areas, and operations and maintenance activities shall be sited at least 100 feet away from on-site drainages and other water features, as identified in the project-specific delineation of wetlands and waters.
- d. Any spillage of hazardous material shall be stopped if it can be done safely. The contaminated area shall be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified.

MM 4.4-22CC: If it is determined during final siting that jurisdictional ephemeral drainages cannot be avoided, the project proponent shall notify the California Department of Fish and Wildlife of potentially jurisdictional features and, if necessary, obtain a Lake and Streambed Alteration Agreement. If waters of the State are impacted, the owner/operator shall notify the Lahontan Regional Water Quality Control Board, and obtain a Waste Discharge Requirement pursuant to the California Porter-Cologne Act, if required.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.4-14KC, MM 4.4-22KC, and MM 4.4-23KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.4-21CC and MM 4.4-22CC, 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.

Solar Facility

Due to the isolated nature of the waters within the Lahontan Region, features found on the project site are not considered WoUS and therefore are not subject to regulation under the federal CWA. In addition, no areas were identified on the project site that exhibit characteristics of wetlands as defined by USACE. Therefore, the proposed project would have no impact on federally protected waters. A total of 0.146 acres of potentially jurisdictional non-wetland WoUS under the regulatory authority of the RWQCB pursuant to the Porter-Cologne Act were mapped within the project site. Alteration or loss of these areas would be significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.4-22KC and MM 4.4-23KC.

City of California City

Implement Mitigation Measures MM 4.4-21CC and MM 4.4-22CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.4-22KC and MM 4.4-23KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.4-21CC and MM 4.4-22CC, impacts would be less than significant.

Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

The project site is not identified as a major terrestrial wildlife movement corridor. No wildlife nursery sites have been identified on or in the vicinity of the project site. The project may provide foraging grounds for special-status and otherwise protected raptors, including golden eagles, northern harrier, and other birds. Project related direct impacts on nesting migratory birds and raptors during construction could include crushing or vehicle collisions with nesting birds and/or destruction of nests and eggs through vegetation clearing and grading with heavy machinery. Indirect impacts could include interference with reproductive success and nest abandonment brought on by increased human presence and noise levels during construction within the breeding season. Additional indirect impacts to migratory birds and raptors from construction of the project could result from the conversion of open land to a solar facility, which would result in the loss of potential breeding habitat. However, with the implementation of Mitigation Measures MM 4.4-1KC through MM-4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, and MM 4.4-19KC through MM 4.4-21KC, as well as Mitigation Measures MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, and MM 4.4-18CC through MM 4.4-20CC, impacts to migratory birds and raptors would be less than significant.

In addition, all lighting installed as a part of the proposed project would comply with the Kern County Dark Skies Ordinance and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as stipulated in Mitigation Measure MM 4.1-5 (see Section 4.1, *Aesthetics*, for full Mitigation Measure text). This would help reduce impacts to wildlife moving through the area. Therefore, the proposed project is not expected to adversely impact wildlife movement and impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.1-5KC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text) and Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, and MM 4.4-19KC through MM 4.4-21KC.

City of California City

Implement Mitigation Measure MM 4.1-5CC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text) and Mitigation Measures MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, and MM 4.4-18CC through MM 4.4-20CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.1-5KC, MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-11KC, and MM 4.4-19KC through MM 4.4-21KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.1-5CC, MM 4.4-1CC through MM 4.4-7CC, MM 4.4-9CC through MM 4.4-11CC, and MM 4.4-18CC through MM 4.4-20CC, impacts would be less than significant.

Impact 4.4-5: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Solar Facility

With the mitigation measures identified earlier to offset impacts to sensitive wildlife, plants, natural communities and aquatic resources, the proposed project is considered consistent with the Land Use, Open Space, and Conservation Elements of the Kern County General Plan, as well as the Open Space and Conservation Element of the California City General Plan.

The project is also located within the Mojave Specific Plan area. The Mojave Specific Plan encourages the preservation of western Joshua trees, Joshua tree woodlands, wildflower displays, or other biologically sensitive flora. Additionally, while the California Desert Native Plants Act is a State act, Kern County administers the permit program for removal of the species covered in the act. As indicated previously, the project would have the potential to result in impacts to western Joshua tree, as well as other native desert plants that may be directly impacted through construction or decommissioning or indirectly impacted through dust and soil compaction or other conditions leading to habitat degradation. Implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC, MM 4.4-9KC through MM 4.4-14KC, MM 4.4-1CC through MM 4.4-7CC, and MM 4.4-9CC through MM 4.4-13CC would reduce project impacts to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.4-1KC through MM 4.4-7KC and MM 4.4-9KC through MM 4.4-14KC.

City of California City

Implement Mitigation Measures MM 4.4-1CC through MM 4.4-7CC and MM 4.4-9CC through MM 4.4-13CC.

Level of Significance

Kern County

With implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-7KC and MM 4.4-9KC through MM 4.4-14KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.4-1CC through MM 4.4-7CC and MM 4.4-9CC through MM 4.4-13CC, impacts would be less than significant.

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 impacts would be less than significant with implementation of Mitigation Measures MM 4.1-5KC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), MM 4.4-1KC through MM 4.4-23KC, MM 4.1-5CC and MM 4.4-1CC through MM 4.4-22CC.

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 Chapter 3, *Project Description*, of this EIR, approximately 14 projects, including other utility-scale energy production facilities, are presently underway or proposed within Kern County. The geographic scope for analysis of cumulative impacts on biological resources is Fremont Valley. In general, bioregions are defined through physical and environmental features, including watershed boundaries and soil and terrain characteristics.

As described above, there are a number of special-status species that currently utilize the project site and surrounding vicinity. Implementation of the project, in addition to the other projects underway or proposed within Kern County, would have the potential to impact the same plant and wildlife species, including Joshua trees, special-status plants, BUOWs, MGS, American badgers, DT, other raptors, and DKF. 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, most 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 Fremont Valley, the project, when combined with these projects, would contribute to an incremental cumulative loss of habitat for special-status species. While the project would have less-than-significant impacts on sensitive biological resources with the implementation of Mitigation Measures MM 4.1-5KC, MM 4.4-1KC through MM 4.4-23KC, MM 4.1-5CC, and MM 4.4-1CC through MM 4.4-22CC at the project level, when combined with related development projects, cumulative impacts would be significant and unavoidable.

In addition, common raven numbers have grown substantially in the past few decades in the western Mojave Desert. Ravens are predators of the DT and BUOW, and compete with, as well as prey on, many special-status raptors and birds. Raven numbers are such that they pose a serious threat to many desert species. Additionally, the common raven population growth is directly attributed to human development and the subsidies it creates that support this adaptable species. Although the proposed project would implement measures to minimize the creation of human subsidies of food, trash, and water, and roost, nest, and perching sites for common ravens (e.g., monitoring water used to wash solar panels to ensure that puddles do not form, trash containment), the project would still provide new roosting, nesting, and perching sites for the common raven from the installation of new facilities (e.g., solar panels, fences, and buildings). When considered within the cumulative context of related projects as described above, the project's contribution to maintaining artificially high common raven populations when combined with other related projects, which threatens other desert wildlife including special-status species, is potentially significant. However, the contribution of the project, with Mitigation Measure MM 4.4-21KC and MM 4.4-20CC incorporated, would not be cumulatively considerable.

The residual effects of the project (i.e., after mitigation measures are implemented) 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 "fake lake effect," particularly within the Central Valley. 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. However, evidence suggests that significant impacts to migratory birds could occur at the cumulative level. Population-level mortality of migratory birds would be considered significant under CEQA. Therefore, the proposed project, in combination with all identified cumulative projects, could result in a cumulatively considerable contribution to a significant cumulative impact.

As described above, four ephemeral drainages occur within the project area and would be impacted by the project. Although features found on the project site are not considered WoUS and therefore are not subject to regulation under the federal CWA, these features are expected to be jurisdictional waters of the State pursuant to the Porter-Cologne Act and Section 1600 of the California Fish and Game Code. However, with incorporation of Mitigation Measures MM 4.4-14KC, 4.4-22KC, MM 4.4-23KC, MM 4.4-21CC, and MM 4.4-22CC, the contribution of project impacts on such resources would not be cumulatively considerable.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.1-5KC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), MM 4.4-1KC through MM 4.4-23KC.

City of California City

Implement Mitigation Measures MM 4.1-5CC (see Section 4.1, *Aesthetics*, for full Mitigation Measure text), and MM 4.4-1CC through MM 4.4-22CC.

Level of Significance after Mitigation

Kern County

Despite implementation of Mitigation Measures MM 4.1-5KC MM 4.4-1KC through MM 4.4-23KC, cumulative impacts would be significant and unavoidable due to the cumulative loss of habitat to special status and transient wildlife species, including desert tortoise, Mohave ground squirrel, migratory birds, American badger, and desert kit fox. Although the project proponent will consult with the Kern County Agricultural Commissioner and obtain permits for the removal of plants protected under the California Desert Native Plant Act, the removal of these plants, including silver cholla and Joshua tree, will be significant and unavoidable and will combine with other projects in the region to create an incremental cumulative loss of these species.

City of California City

Despite implementation of Mitigation Measures MM 4.1-5CC and MM 4.4-1CC through MM 4.4-22CC, cumulative impacts would be significant and unavoidable due to the cumulative loss of habitat to special status and transient wildlife species, including desert tortoise, Mohave ground squirrel, migratory birds, American badger, and desert kit fox.

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4.5.1 Introduction

This section provides the prehistoric, ethnographic, and historical contextual background information for cultural resources in the project area. This section also analyzes the project’s potential impacts to cultural resources and identifies mitigation measures that would reduce potential impacts to cultural resources to below a level of significance. The analysis in this section is supported by the *Cultural Resources Inventory and Evaluation Report* prepared for the project by Stantec (Stantec 2020a; see Appendix E) and peer reviewed by Michael Baker International. The *Cultural Resources Inventory and Evaluation Report* included a cultural resources records search, a Sacred Lands File Search and Native American contacts program, a pedestrian survey of the project site, and preparation of the technical report according to the Archaeological Resources Management Report (ARMR) guidelines set by the California Office of Historic Preservation and in compliance with the requirements of the California Environmental Quality Act (CEQA). These studies were conducted in compliance with California Public Resources Code (PRC) Section 5024.1 and CEQA to identify archaeological, historic built architectural, and other cultural resources in the project area. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from these reports and is not included in the appendix. This report was peer reviewed by professional archaeologists of Michael Baker International, as a consultant to Kern County.

Methods used to identify archaeological, historic, and built architectural resources in the project area were implemented in compliance with CEQA and are described in more detail below and in Appendix E of this EIR.

Cultural Resource Terminology

For the purposes of CEQA, “cultural resources” generally refer to prehistoric and historical archaeological sites and the built environment. Cultural resources also include areas that are of cultural significance to, or affiliated with, California Native American tribes. Project impacts to tribal cultural resources are evaluated in Section 4.15, *Tribal Cultural Resources*, of this EIR.

Definitions of key cultural resource terms used throughout this section are as follows:

Alluvium: a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.

Archaeological Site: A site is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains. Archaeological remains usually take the form of artifacts (e.g., fragments of tools, vestiges of utilitarian, or nonutilitarian objects), features (e.g., remnants of walls, cooking hearths, or midden deposits), and ecological evidence (e.g., pollen remaining from plants that were in the area when the activities occurred). Prehistoric archaeological sites generally represent the material remains of Native American groups and their activities dating to the period before European contact. In some cases, prehistoric sites may contain evidence of trade contact with

Europeans. Ethnohistoric archaeological sites are defined as Native American settlements occupied after the arrival of European settlers in California. Historic archaeological sites reflect activities during the Historic period.

Artifact: An object that has been made, modified, or used by a human being.

Cultural Complex: A complex is a specific archaeological manifestation that represents a general mode of life, characterized archaeologically by specific aspects of culture (e.g., technology, artifact types, economic systems, trade, burial practices).

Cultural Resource: Cultural resources are expressions of human culture and history in the physical environment, and may include archaeological sites, buildings, structures, objects, districts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains, but also may include areas where significant human events occurred, even though evidence of the events no longer remains. Cultural resources also include places that are considered to be of traditional cultural or religious importance to social or cultural groups.

Ethnographic: Relating to the study of human cultures. “Ethnographic resources” represent the heritage resource of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Historic Period: The period that begins with the arrival of the first 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 Public Resources Code (PRC) Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.

Holocene: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

Isolate: An isolated artifact or small group of artifacts that appear to reflect a single event or activity. Because isolates may lack identifiable context, and may not have the potential to add important information about a region, culture, or person, they are generally not considered under CEQA to be historical or unique archaeological resources (PRC Section 21083.2 and CEQA Guidelines Section 15064.5).

Lithic: Of or pertaining to stone. Specifically, in archaeology lithic artifacts are chipped or flaked stone tools, and the stone debris resulting from their manufacture.

Native American Tribe: A Native American tribe located in California that is on the contact list maintained Native American Heritage Commission (NAHC). This definition does not distinguish between federally recognized and non-federally recognized tribal groups and is therefore more inclusive than the federal

definition of "Indian tribe" (PRC Section 21073). Refer also to Section 4.15, *Tribal Cultural Resources*, of this EIR.

Pleistocene (Ice Age): An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

Prehistoric Period: The era prior to 1772. The later part of the prehistoric period is also referred to as the protohistoric period in some areas, which marks a transitional period during which native populations began to be influenced by European presence resulting in gradual changes to their lifeways.

Quaternary Age: The most recent of the three periods of the Cenozoic Era in the geologic time scale of the ICS. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene Epochs.

Stratigraphy: The natural and cultural layers of soil that make up an archaeological deposit, and the order in which they were deposited relative to other layers.

Tribal Cultural Resource: These are defined in Assembly Bill (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)). Refer to Section 4.15, *Tribal Cultural Resources*, of this EIR.

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 area is within the Fremont Valley region of the Mojave Desert, which is a flat, 523-square mile valley located southwest of Koehn Dry Lake in the western portion of the Mojave Desert. Situated in the westernmost area of the Mojave Desert at the eastern base of the Sierra Nevada Mountains, the Fremont Valley has a continental climate with hot, dry summers and cold, dry winters. The area is home to many dry lake beds (playas), saline ponds, and north-south trending mountain ranges that cast a rain shadow over the valley. Between the mountains, the terrain is dominated by sand and gravel basins, which are characterized by their lack of water.

Prehistoric Setting

The prehistory of the Mojave Desert spans 12,000 years and is usually characterized by four cultural and temporal periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene. Within these periods, prehistory of the southern California deserts is generally described in terms of cultural complexes. A complex is a specific archaeological manifestation that represents a general mode of life, characterized

archaeologically by specific aspects of culture (technology, artifact types, economic systems, trade, burial practices, etc.). The four cultural and temporal periods of the Mojave are described below.

Pleistocene Period

The Pleistocene Period (12,000–7,500 Before Present [BP]) represents the first documented Native American occupation of the region. This time period is highlighted by a transition from cool and moist conditions of the Late Pleistocene to the arid and hot conditions of the Early Holocene. There are three distinct cultural complexes associated with this time period: fluted point complexes; the Lake Mojave complex; and the San Dieguito complex.

Fluted point complexes have been identified both in the southern California deserts and the surrounding areas. Fluted point complexes, although present in the southern California deserts, are primarily identified in surface contexts. The Lake Mojave and San Dieguito complexes are more common in the area than fluted point complexes and also share several key artifacts types. Artifacts usually associated with these two complexes include crescents, scrapers, and large bifaces.

The Lake Mojave complex nomad groups were organized in relatively small, mobile groups and practiced a forager-like subsistence strategy. Some trade with coastal groups was practiced, as evidenced by the presence of shell beads. The Lake Mojave complex sites have been found primarily around Fort Irwin, Lake Mojave, Lake China, Rosamond Lake, and Twentynine Palms. The Lake Mojave complex is centered in the southwestern Great Basin, while the San Dieguito complex extends from coastal California to the Colorado Desert. San Dieguito sites typically include cleared circles, rock rings, other rock features, and heavily varnished crude stone tools.

Early and Middle Holocene Periods

The Early and Middle Holocene Periods (7,000–3,000 BP) were very hot and dry, and generally poorly represented in the Mojave Desert. Although the reasons for this are not fully understood, it has been suggested that seasonal river flooding may have affected the numbers of sites dating to this time period. Regardless, neighboring regions provide data regarding the Early and Middle Holocene Periods. In these areas, the time period is generally characterized by a diversification of artifact assemblages, including the introduction of ground-stone technologies for seed processing. Pinto, Silver Lake, and Humboldt complexes are associated with the Early and Middle Holocene Periods. The bow and arrow appear in artifact assemblages towards the end of this time period.

Late Holocene Period

The Late Holocene Period (2,500–450 BP) is characterized by Native American populations expanding their territories. Gypsum, Elko, Rose Spring, East Gate, Humboldt, and Desert complexes are associated with this time period. During this time period, changes in the flow of the Colorado River into Lake Cahuilla expanded it and created a series of freshwater lakes around it. These changes facilitated the development of agriculture and semi-permanent villages along the Lower Colorado River. Simultaneously with the development of agriculture, extensive trade networks were established to connect agricultural settlements in the greater southwest with the Gulf of California and the Pacific Ocean.

Ethnographic Setting

Following the Late Holocene Period, Euroamerican exploration and contact with local Native Americans gradually increased across the region. Euroamerican activity in the area, as in other parts of California, negatively affected Native American populations and culture. Euroamericans introduced new diseases, claimed Native American tribal territories for their uses, and relocated Native American groups to missions or areas beyond their traditional territories. These circumstances disrupted the cultural patterns of Native American groups.

The Kawaiisu are the Native American tribal group that are known to have lived in the geographic vicinity of the project area. Kawaiisu primarily occupied the low mountainous ridge between the Mohave Desert and the San Joaquin Valley, which includes portions of the Tehachapi and Sierra Nevada mountains. Their core habitation area encompasses approximately 2,500 square miles, but Kawaiisu did not maintain strict territorial boundaries.

Kawaiisu collected numerous plant resources for food, including acorns, seeds, nuts, berries, and roots. They also hunted a wide variety of large and small mammals, including deer, antelope, mountain sheep, various rodents, chuckwallas, and birds. Kawaiisu also acquired aquatic resources (e.g., fish and shellfish) from streams in their territory and also collected insects for food. In addition, Kawaiisu made seasonal trips to areas such as Indian Wells Valley, the Granite Mountains, and the Mojave Desert to acquire various resources.

Kawaiisu constructed several types of structures including; winter houses made of wood poles, willow, bark, and brush; open, flat-roofed shade houses for use in the summer; sweathouses; and granaries to store acorns, nuts, and seeds. Bark and tule mats were used to strengthen structures and for protection from the rain. In addition, circular brush enclosures were created for ceremonies. Kawaiisu material culture included the bow and arrow; bone and thorn awls; undecorated pottery such as Owens Valley Brownware, which was probably obtained through trade with neighboring Great Basin groups; twined and coiled baskets; cordage for use in nets and mats; and stone bowls and pestles. Kawaiisu used twined and coiled baskets and developed a distinctive variant of the coiled technique that is easily recognized for its design and decorative qualities. It is believed that pottery was traded, rather than manufactured by Kawaiisu.

Kawaiisu interacted and traded with their neighbors that included Great Basin groups such as Western Shoshone and Southern Paiute and California groups such as Tubatulabal, Southern Yokuts, Kitanemuk, and Serrano. Kawaiisu generally maintained peaceful relations with their neighbors and interacted with them during seasonal expeditions to acquire resources in different ecological zones and to trade for resources such as obsidian, salt, and pottery.

Historic Context

The following historical background reviews three important themes—transportation, settlement, and agriculture and ranching—in the history and development of Kern County, California. The themes, although discussed separately, are economically and socially intertwined in Fremont Valley history and serve to provide a comprehensive chronology of how the area came to be characterized today.

Transportation

Prior to the arrival of non-natives, trails and footpaths used by Kawaiisu crisscrossed Fremont Valley. Non-native explorers often followed existing Native American trails and footpaths or used Native American guides, knowing that they had already traversed difficult terrain, and that there were likely settlements as well as water and food sources along the way.

The first indication of development in the Fremont Valley area was the town of Mojave that dates to 1876 and is associated with construction of the Southern Pacific Railroad (SPRR) across the Tehachapi Range and through the desert. Mojave served as an appropriate location to couple and uncouple helper engines before proceeding west on to the Tehachapi pass. The town also served as a shipping center for borax from Death Valley and Borax Lake in the 1890s. During this period, a road, now known as Twenty Mule Team Road, ran diagonally across Fremont Valley from Searles Lake directly to Mojave. The road also passed through what is now California City.

From the 1850s through the 1870s, the federal government gave public land to the railroad companies in order to encourage development. The lands were given in alternating sections creating a unique “checkerboard” pattern. Opposite alternating sections were owned by Charles Crocker Estate. Crocker was one of the chief railroad executives responsible for initiating and executing transcontinental railroads, including SPRR.

Between 1908 and 1913, the Los Angeles Aqueduct was constructed to bring water from Owens Valley to Los Angeles. The alignment ran along the base of the Tehachapi Range at the west end of Fremont Valley. The SPRR struck a deal with the City of Los Angeles to construct the Owenyo branch of the railroad from Mojave to Owenyo (near Independence in Inyo County) in exchange for a guarantee of transporting freight for the aqueduct project. The Owenyo branch was completed in 1910 and the Los Angeles Aqueduct was completed in 1913 with their parallel alignments demonstrating the intertwined relationship between the two infrastructure projects.

Sometime between 1915 and 1943, an unimproved Phillips Road was graded through the project area following section lines east from State Highway 14 and passing through the small settlement of Neuralia along the SPRR connecting with Neuralia Road running north-south, also along section lines. General improvements to the area, such as graded roads along section lines, may have been an attempt to draw settlers to the area in the early twentieth century.

Settlement

Although the project area, on the edge of the Mojave Desert, appears to be in a relatively inhospitable location, past studies indicate that homesteading was prevalent in the California Desert between 1885 and 1940. In Fremont Valley, the potential for homesteading was enhanced by the presence of a reliable water source beneath the surface of the desert.

After the Los Angeles Aqueduct was installed, SPRR started to promote settlement in the area with the hope of selling the company’s lands in Fremont Valley, some of which are in the project area. By 1912, SPRR was placing settlers on its land grant lands.

Census records indicate that there were people living and working in Fremont Valley in the 1920s and 1930s, some of whom relocated to the area in order to take advantage of the Homestead Entry-Stock Raising Act of 1916. However, there were also teachers, retailers, farmers, ranchers, and herders living in the area.

Desert settlements were also an option during the Great Depression for people who looked to practice self-sufficiency rather than look for jobs or gain access to food lines in larger cities.

In the 1940s and 1950s, the establishment and expansion of Edwards Air Force Base and the presence of the Mendiburu and Rudnick (M&R) Ranch at Cantil helped bring more families into the area. Then, in the 1950s, a sociologist from Los Angeles named Nat K. Mendelsohn was attracted to Fremont Valley by the M&R Ranch that seemed to have a consistent supply of water on their ranch. Mendelsohn started the California City Development Company and began to purchase property in Fremont Valley, including large sections of M&R Ranch holdings. In 1958, after purchasing 58,000 acres, work started on the first subdivision for California City at the southern end of the project area. Generally, people have been historically drawn to settle in Fremont Valley for a variety of reasons that largely depended upon the national economy and socioeconomic trends.

Agriculture and Ranching

Spanish colonists first brought cattle to the San Diego area in 1769. The initial count of 200 cattle expanded as missions and mission ranches spread up the California coastline. By 1823, there were an estimated 400,000 cattle, 61,600 horses, and 300,000 sheep on mission lands. The influx of non-native settlers into California who came with the California Gold Rush in the 1850s and 1860s created a constantly growing demand for beef and mutton at burgeoning mining towns. To meet demand, cattle were brought in from the midwest, Mexico, and Texas, and by 1872, cattle were predominantly bred and fattened on ranches rather than being left to open-range grazing.

Settlers who moved into the Fremont Valley during the first quarter of the twentieth century were likely using small-scale farming practices on relatively small parcels. By the 1930s, ranchers and farmers in Fremont Valley were starting to use deeper wells with modern pumping technology that allowed them to maintain larger parcels and bigger herds. Since the 1950s, the ranching and agricultural trends have changed yet again, declining dramatically in the project area to the point where ranching and agriculture are not evident in Fremont Valley today.

Existing Cultural Resources

To evaluate the project's potential impacts on significant cultural resources, a cultural resources assessment of the project area was prepared, which included a cultural resources records search and a pedestrian survey. The methodology of the cultural resources assessment is described in detail in Appendix E of this EIR. A summary of the records search and pedestrian survey findings are summarized below.

Records Search

A records search of the project area, including a 0.25-mile radius buffer, was conducted by staff at the Southern San Joaquin Valley Information Center of California Historic Resource Inventory System (CHRIS) on August 19, 2018 and September 9, 2019 (Stantec 2020a). The search was conducted to identify any previously recorded cultural resources and previously conducted cultural resources studies in the project vicinity. The following lists and databases were also reviewed (Stantec 2020a):

- Office of Historic Preservation Directory of Properties in the Historic Property Data File for Kern County, California

- National Register of Historic Places (NRHP)
- California Register of Historical Resources (CRHR)
- California Inventory of Historic Resources (1998)
- California Historical Landmarks (1990)
- California Points of Historical Interest (1992)

In addition to the CHRIS records search, the cultural resources assessment report included a review of historical maps, aerials, and literature to determine past land use activities within the project area that could indicate the likelihood of encountering cultural resources. Aerial imagery and topographic maps were used to identify roads over 50 years old and to identify buildings that may be present on the project site. A detailed description of the results of this additional review is provided in Appendix E.

The records search results identified 12 previously recorded sites within the project area and an additional 24 within 0.25 miles of the project area. Additionally, four previously conducted studies covered portions of the project area.

Pedestrian Survey

Between August 16 and September 13, 2019, Stantec archaeologists conducted an archaeological inventory of the project area by walking parallel transects spaced at approximately 10 to 15 meters. The pedestrian survey encompassed 1,955 acres of private property. The purpose of the archaeological inventory was to inspect all exposed ground surface for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were visually inspected.

The goals of the inventory were to identify cultural resources and collect sufficient data regarding the quality and quantity of the resources relating to specific site types and appropriate research domains. The collection of this data generally facilitates making preliminary recommendations regarding a site's eligibility for the CRHR and NRHP and to determine if further archaeological studies (e.g., subsurface testing) may be required at specific sites.

Survey Results

The archaeological field survey resulted in the recordation of 26 new resources and 29 new isolates: 11 prehistoric resources and 15 historic-era resources. Stantec archaeologists also revisited and updated 12 previously recorded resources. In total, 38 sites were evaluated (26 new sites and 12 previously recorded sites). Resource evaluations are summarized in Table 4.5-1, *Evaluation of Resources Recorded in the Project Area*.

Each resource was evaluated for listing eligibility in the NRHP. 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:

1. Are associated with events that have made a significant contribution to the broad patterns of our history;
2. Are associated with the lives of persons significant in our past;
3. 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
4. Have yielded, or may be likely to yield, information important in prehistory or history.

Each resource was evaluated for listing eligibility in the CRHR. A cultural resource is considered historically significant and eligible for the CRHR if:

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.

As indicated in Table 4.5-1, *Evaluation of Resources Recorded in the Project Area*, no resources eligible for listing in the NRHP or CRHR were identified based on the resource evaluations conducted.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
SSM-2	No	Historic Refuse	This historic site consists of a large diffuse refuse scatter located at the intersection of Neuralia Road and Dodson Avenue. The scatter consists of household items, including assorted cans, stoneware, and glass bottle fragments. The artifacts date to circa 1950-1970.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-1	No	Historic Refuse	This historic site consists of refuse deposits that include tobacco tins, sanitary cans, hole-in-top cans, external friction coffee cans/lids, intact bottles, and various glass bottle fragments. The southeastern portion of the site had a concentration of these items (concentration 1), while the remainder of the refuse is scattered around the site.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-2	No	Historic Refuse	This historic site consists of a refuse deposit that primarily includes metal cans. The majority of the cans appear to be beer cans with church key and punch hole openings. The site also contains various colored glass fragments including, green, clear, brown, and a “Pepsi” bottle fragment. The area appears to have been used for target practice, as numerous shotgun shells were found in the area.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-3	No	Historic Refuse	This historic site consists of a refuse deposit that mainly includes sanitary cans and various glass fragments including, flat window glass, milky colored glass, and clear, amethyst, green, and brown bottle glass. This area appears to have been used for target practice, as the cans are damaged, and multiple shotgun shells were found in the area.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-4	No	Prehistoric Lithic Scatter	This prehistoric lithic scatter consists of eight tertiary white CCS flakes with reddish and brown coloring. The flake size varies from 1 to 3 centimeters (cm) in length. An access road bisects the site.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
JT-5	No	Historic Refuse	This historic site consists of a refuse deposit. The refuse is concentrated at the northern end of the site boundary. The refuse consists of clear and amber glass fragments, a milk glass bottle base, white ceramic dinner plates, a tuna can, and a dinner plate with calendar months and the year 1958 on it.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-6	No	Historic Refuse	This historic site primarily consists of a refuse deposit that includes glass and ceramic fragments. The deposit measures 115 feet north to south by 52 feet east to west. One prehistoric artifact, a light beige chert flake measuring 7 cm by 1.5 cm by 2.5 cm, was also observed at the site.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-7	No	Historic Refuse	This historic site consists of a refuse deposit that includes approximately 20 hole-in-top cans with knife cut openings. The site also contains modern beer and juice bottles. This site measures 37 feet north to south by 26 feet east to west.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-8	No	Prehistoric Lithic Scatter	This prehistoric site consists of a very sparse lithic scatter and three handstones. A concentration of fire-affected rock (FAR) is also scattered throughout the site. No charcoal or darkened soil was observed, consequently the origin of the FAR is undetermined. The site measures 17 meters north south by 30 meters east west.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-9	No	Prehistoric Lithic Scatter	This small prehistoric site consists of a CCS biface fragment and mano and metate fragments. The biface has been split lengthwise and measures 4.7 cm by 1.7 cm by 1.0 cm. The site measures 17 meters north south by 30 meters east west.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
JT-10	No	Prehistoric Lithic Scatter	This prehistoric site consists of a very sparse lithic scatter that includes two obsidian flakes and one schist flake.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
GM-1	No	Prehistoric Lithic Scatter	This prehistoric site consists of two artifacts, eight pieces of FAR arranged in a triangle shape, a scatter of modern bottles, and a scatter of FAR. Artifact 1 is an obsidian leaf-shaped projectile point, possibly a Humboldt concave base projectile point (Stantec 2020a). The point is 95 percent intact, features edge modification, and measures 7 cm by 3.4 cm by 9 cm thick. Artifact 2 is a rose colored quartz flake was found near the triangular arrangement of FAR. The modern bottle scatter is located in association with the scattered FAR. The FAR scatter measures 78 cm (southeast/northwest), 61 cm (north/south). No charcoal or darkened soil was found near the FAR, and consequently the origin of the FAR is undetermined.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-2	No	Historic Refuse	This historic site consists of a refuse deposit along a roadway. The deposit contains post WW-II clear liquor bottle glass, amber bottle glass, and modern clear glass; a small scatter of cans, including three with church key openings, a 1-quart Quaker State oil can, and a crushed, knife opened sanitary vegetable can measuring 4.5 inch by 3.875 inch; an iron pipe fragment; and concrete fragments.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-3	No	Historic Refuse	This historic site primarily consists of a refuse deposit that includes approximately 70 cans and a small amount of glass bottle fragments dating to the late 1950s, but also includes a prehistoric brown chert utilized flake. The historic artifacts are scattered across a dune swale.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-4	No	Historic Refuse	This historic site primarily consists of a refuse deposit that includes 15 sanitary cans; a single sardine can; a clear bottle base with an ‘OWENS’ makers mark; a cobalt blue bottle side panel fragment embossed with ‘MAGN_THE CHAS_CHEMICAL_GLENBRO’; a cobalt blue bottle base embossed with ‘USA_M_22’; amethyst, aqua, and green glass bottle fragments; ceramic whiteware that appears to date from the 1920s-1930s; a modern white lacquered bread box; and an aqua glass insulator.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
GM-5	No	Historic Foundation	This historic site consists of an abandoned well, pump, cistern, motor mount foundations, and a sparse artifact and debris scatter. Two upright 8 inch by 8 inch wood posts are present at the west end of the site. The debris scatter consists of clear glass fragments, wire nails, and miscellaneous metal debris.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-6	No	Fire Affected Rock	This prehistoric site consists of three discrete concentrations of FAR. All three concentrations consist of 30-100 fire affected rhyolite and granite cobbles that appear to have been scattered across the site by past agricultural practices. All three concentrations were recorded as features. Feature 1 consists of approximately 50 FAR and covers 370 square feet. Feature 2 consists of approximately 30 FAR and covers 240 square feet. Feature 3 consists of approximately 100 FAR and covers 1,327 square feet.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-7	No	Prehistoric Lithic Scatter	This prehistoric site consists of four metate fragments and a concentration of 35 fire affected rhyolite porphyry and andesite cobbles. The site is located on an alluvial terrace at the edge of a creosote scrub vegetation community.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-8	No	Prehistoric Lithic Scatter	This prehistoric site consists of an extensive scatter of fire affected basalt, andesite, rhyolite, and granite cobbles; a blue-black chert bi-face fragment; a sand-blasted obsidian flake; and a basalt mano fragment. Approximately 45-50 FAR cobbles are concentrated in one area of the site.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
GM-9	No	Refuse Scatter	<p>This historic site primarily consists of a large refuse deposit that includes a number of small concentrations of historic artifacts, but also includes a prehistoric mano fragment. Artifacts include 150+cans of various types. Associate household artifacts include tan, salt-glazed pipe fragments; barrel hoops; milled lumber; 1/8-inch metal hardware embossed “Homer Laughlin;” semi-vitreous whiteware embossed “The Angelus,” with a Pink Rose Floral pattern; amber bottle base embossed “IPW” with diamond makers mark; amber hand tooled bottle finish; sleeping cot bracket; Blue glazed fiesta ware; and a 1.75-inch pipe hammered into the ground near the main debris concentration. Artifact 1 is a metal cone top can, which was developed in 1935 (Stantec 2020a). Artifact 2 consists of two fragments of a Homer Laughlin plate with a pink floral decal design, scalloped edge, and a black transfer print manufacturer’s mark. The mark reads “HL (mark) / Homer Laughlin / Angelus (italics).” The Angelus was produced by Homer Laughlin between 1905 and 1916 (Stantec 2020a). Artifact 3 is a brown glass bottle neck with a tooled crown cap finish. Tooled crown finishes date between 1894 and 1915 (Stantec 2020a). Overall, diagnostic elements of the artifacts at the site span 1894 to 1935+ but seem to cluster between 1905 and 1935.</p>	<p>Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.</p>
GM-10	No	Agricultural Holding Pond	<p>This historic site is an agricultural holding pond. The holding pond is a rectangular depression measuring 100 feet east/west by 61 feet north/south encompassing 6,100 square feet that is surrounded by a berm measuring 1 to 3 feet high. No metal pipes or other infrastructure materials indicating the exact usage of the feature were identified, and there are no roads in the vicinity of the pond.</p>	<p>Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.</p>
GM-11	No	Historic Refuse	<p>This historic site primarily consists of a refuse scatter with two concentrations of artifacts. One concentration includes approximately 20 rotary opened sanitary cans measuring 3.375 inch x 1.75 inch; one lid embossed “OP7_Ø_132_B”; a sanitary vegetable can with corrugated body measuring 3 inch x 4.375 inch with rotary opening; nine round cans, most likely tuna fish cans; rotary opened metal can lids; and green, clear, and amber glass fragments. The other concentration includes 12 metal cans. In addition to the two concentrations of artifacts, there are metal cans scattered across the site area.</p>	<p>Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.</p>

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
GM-12	No	Prehistoric Lithic Scatter	This prehistoric site consists of 10 FAR covering an area measuring approximately 5 by 5 meters and a sparse lithic scatter that includes four white chert flakes and an agate tool resembling a burin or drill, measuring 1.0 cm by 1.5 cm by .08 cm.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
Phillips Road/GM-13	No	Historic Road	This site is historic Phillips Road that was constructed sometime between 1915 and 1943. The original historic alignment of the road is intact, but the roadbed itself was destroyed during recent road construction activities, including raising the roadbed, grading the shoulders, and paving the alignment with asphalt.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
Neuralia Road/GM-14	No	Historic Road	This site is historic Neuralia Road that was constructed sometime between 1915 and 1943. The original historic alignment is intact, but the roadbed itself was destroyed during recent road construction activities, including raising the roadbed, grading the shoulders, and paving the alignment with asphalt.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
GM-15	No	Historic Refuse	This historic site consists of a historic building foundation associated with a refuse deposit and a shallow ditch. The foundation is rectangular with a semi-subterranean building pad and raised stem walls for the main floor with a stairwell outside of the eastern edge of the structure. Hundreds of household cans, bottle shards, and ceramic fragments are located in and around the structure, as well as a terra-cotta pipe and miscellaneous hardware debris. The site may be associated with historic site P-15-014733 that is located near it across Washburn Boulevard.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-003826	Yes	Historic Road	Originally recorded in 1993 and consists of an abandoned dirt road and a small irregularly shaped asphalt pad, scattered brick and slag, and trash scatter.	Not Eligible. No evidence of the site was observed. It is assumed that this site has been destroyed and cannot be evaluated.
P-15-019695	Yes	Isolate	Isolated jasper flake.	Not Eligible. Isolates do not meet the criteria required to be considered a resource.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
P-15-019685	Yes	Historic Refuse	Originally recorded in 2018 as a historic trash scatter. A 7-Up bottle from the site is dated to 1957.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-019686	Yes	Historic Refuse	Originally recorded in 2017 as a large historic trash scatter. The site consists of five 16-ounce church-key open beer cans, one condensed milk can, and 16 clear glass medicine bottles.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-000970	Yes	Prehistoric Lithic Scatter	This site was originally recorded in 1971 as a lithic scatter	Not Eligible. The site could not be located and is most likely destroyed.
P-15-019691	Yes	Historic Refuse	Originally recorded in 2018 and consists of a small historic trash scatter.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-014732	Yes	Historic Refuse	Originally recorded in 2008 as a large historic trash scatter consisting of 70 cans, glass, ceramics, and metal.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-014733	Yes	Historic Foundation and Refuse	Originally recorded in 2008 as two concrete foundations and historic debris. This resource is an unassociated refuse deposit with diagnostic elements dating to 1957.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.

Table 4.5-1. Evaluation of Resources Recorded in the Project Area, continued

Resource Number	Previously Recorded?	Resource Type	Description	CRHR/NRHP Eligibility
P-15-019712	Yes	Historic Refuse	Originally recorded in 2018 as a historic trash scatter. The artifact assemblage consists of more than nine crushed matchstick filled cans.	Not Eligible. The resource does not meet Criteria 1-4 for listing in the CRHR and Criteria A-D under the NRHP.
P-15-019720	Yes	Isolate	Consists of a metate made from a green granitic material that measures 31 cm by 43 cm by 6 cm	Not Eligible. Isolates do not meet the criteria required to be considered a resource.
P-15-019715	Yes	Isolate	Originally recorded in 2018 as an isolate consisting of a broken metate.	Not Eligible. Isolates do not meet the criteria required to be considered a resource.
<p>Notes: Isolates are not considered a prehistoric or historic site because of their inability to provide useful data beyond their identification and documentation and therefore considered not eligible. Source: Stantec 2020a (see Appendix E).</p>				

4.5.3 Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act (NHPA)

The NHPA of 1966, as amended (16 USC 470f), and its implementing regulation—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 of 1966, 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 both 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” (U.S. Department of the Interior 1995). 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

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 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 CCR 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.

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 (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the 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 (PHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines (Title 14 CCR Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the 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 (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by

the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA Guidelines apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA Guidelines Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria provided in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA 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:

1. Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the 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 “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 Graves Protection and Repatriation Act (Cal NAGPRA) of 2001

Codified in the California Health and Safety Code Sections 8010–8030, Cal 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,” Cal 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. Cal 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

The 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.

California Penal Code, Section 622.5

California Penal Code Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code, Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Kern County General Plan

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

Chapter 1. Land Use, Open Space and Conservation Element

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

The policies, goals, and implementation measures in the City of California City General Plan for cultural resources applicable to the project are provided below.

Chapter 5. Open Space and Conservation

5.15 Conservation Goals, Policies, and Implementation Measures

Goal

- Promote conservation of historical and cultural resources.

Policy

- Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.
- Encourage public and private efforts toward preserving structures or sites which are of historic value to the community.

Implementation Measures

C-14: The City shall require the preservation of historical and cultural resources by implementation of the following measures:

- Encourage local groups and schools to enhance and promote historical resources and community activities for all residents within the General Plan Planning Area.
- Prior to issuance of a grading or building permit, new development proposals shall be required to complete records and literature search and/or a Phase 1 Assessment to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project as conditions of approval.

4.5.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts to cultural resources have been evaluated using a variety of resources. The analysis in this section is supported by the *Cultural Resources Inventory and Evaluation Report* located in Appendix E of this EIR (Stantec 2020a). The *Cultural Resources Inventory and Evaluation Report* is based upon a cultural resources records search, a Sacred Lands File Search and Native American contacts program, and a pedestrian survey. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the CEQA Guidelines, to determine if a project could potentially have a significant impact with respect to cultural resources.

- a) Cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines Section 15064.5;
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5; or,
- c) Disturb any human remains, including those interred outside of formal cemeteries.

According to CEQA Guidelines Section 15064.5(b), a project with an effect 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 guidelines further state that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Impacts on cultural resources could result from ground-disturbing activities and/or damage, destruction, or alteration of historic structures. Ground-disturbing activities include project-related excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and sub-surface disturbance that could damage or destroy surficial or buried archaeological resources including prehistoric and historic remains or human burials.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to cultural resources, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

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.

Known Resources

As described above, a cultural resources assessment of the project area was prepared which included a cultural resources records search and a pedestrian survey (refer to Appendix E). The archaeological field survey resulted in the recordation of 29 new isolated artifacts and 26 new sites: 11 prehistoric resources and 15 historic-era resources. Stantec archaeologists also revisited and updated 12 previously recorded resources. In total, 38 sites were evaluated (26 new sites and 12 previously recorded sites). Each resource was evaluated for listing eligibility in the NRHP and CRHR. Resource evaluations are summarized in Table 4.5-1, *Evaluation of Resources Recorded in the Project Area*.

As shown in Table 4.5-1, *Evaluation of Resources Recorded in the Project Area*, none of the previously recorded resources or newly recorded resources identified in the project area are considered eligible for listing under Criteria A through D of the NRHP and Criteria 1-4 of the CRHR. Therefore, the proposed project would not result in a substantial adverse change in the significance of a historical or archaeological resource and no impact would occur.

Unknown Resources

There is a possibility that subsurface archaeological deposits exist in the project area, since archaeological sites may be buried and show no surface manifestation. Prehistoric resources include, but are not limited to, chert or obsidian flakes; projectile points; mortars; pestles; and dark friable soil containing bone dietary debris, heat-affected rock, or human burials. Historic resources may include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, which are often located on the surface or in old wells or privies.

In the event that unknown archaeological resources are discovered during project construction, significant impacts could occur. With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-3KC and MM 4.5-1CC through MM 4.5-3CC, potential impacts to previously unrecorded historical or archaeological resources would be reduced to less than significant.

Mitigation Measures

Kern County

MM 4.5-1KC: Prior to issuance of grading permits, the project proponent/operator shall:

- a. Retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards as published in Title 36, Code of Federal Regulations, part 61 (36 CFR Part 61) to carry out all mitigation measures related to archaeological and historical resources.
- b. The services of a qualified archaeological monitor and Native American monitor shall be retained by the project proponent/operator to monitor all ground-disturbing activities associated with the construction of the proposed project. The Native American monitor shall be selected from a list of Native American contacts with traditional ties to the project area, provided by the Native American Heritage Commission and/or consultation with Native American tribal groups who may have interest in the project area. The archaeological monitor shall work under the supervision of the qualified archaeologist.
- c. The qualified archaeologist, archaeological monitor and Native American monitor shall be provided all project documentation related to cultural resources prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the qualified archaeologist, archaeological monitor and Native American monitor.

MM 4.5-2KC: Prior to the issuance of grading or building permits, and for the duration of construction activities, a Construction Worker Environmental and Cultural Awareness Training Program shall be provided to all new construction workers within one week of employment at the project site, laydown area and/or transmission routes. The training shall be prepared and conducted by the qualified archaeologist and may include participation of the Native American monitor. The training may be video format. The

qualified archaeologist shall be available to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must resume when construction activities resume. The training shall include, but not be limited to:

- a. A discussion of applicable cultural resources statues, regulations and related enforcement provisions;
- b. An overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups, provided by the Native American monitor or tribal leader;
- c. A summary of the effects of the proposed project on cultural resources;
- d. Samples or visuals of artifacts that might be found in the project area;
- e. A discussion of what such artifacts may look like when partially or totally buried and then freshly exposed;
- f. A discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during construction;
- g. Instruction that in the event cultural resources are unearthed during ground-disturbing activities, the qualified archaeologist, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the site until the qualified archaeologist has evaluated the find, determined whether the find is culturally sensitive, and designs an appropriate short-term and long term treatment plan. The qualified archaeologist, in consultation with the Planning and Natural Resources Department and Native American monitor shall establish an appropriate protocols and procedures for minimizing impacts during construction and future impacts during project operation and maintenance;
- h. An informational guide that identifies the reporting procedures in the event of a discovery;
- i. Other information as deemed necessary by the qualified archaeologist or Native American monitor;
- j. An acknowledgement form signed by each working indicating that environmental/cultural training has been completed;
- k. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental/ cultural training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are wearing hard hats with the required sticker;
- l. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.

MM 4.5-3KC: In the event archaeological materials are encountered during the course of grading or construction for any construction components, the project contractor shall cease any ground-disturbing activities within 100 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 100-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 qualified archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The qualified archaeologist in consultation with the Native American monitor, if appropriate, 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 Guidelines (CEQA) 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 Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified 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 unearthened cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified 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.

City of California City

- MM 4.5-1CC:** Prior to issuance of grading permits, the project proponent/operator shall:
- a. Retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards as published in Title 36, Code of Federal Regulations, Part 61 (36 CFR Part 61) to carry out all mitigation measures related to archaeological and historical resources.
 - b. The services of a qualified archaeological monitor and Native American monitor shall be retained by the project proponent/operator to monitor all ground-disturbing activities associated with the construction of the proposed project. The Native American monitor shall be selected from a list of Native American contacts with traditional ties to the project area, provided by the Native American Heritage Commission and/or consultation with Native American tribal groups who may have interest in the project area. The archaeological monitor shall work under the supervision of the qualified archaeologist.

- c. The qualified archaeologist, archaeological monitor and Native American monitor shall be provided all project documentation related to cultural resources prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the qualified archaeologist, archaeological monitor and Native American monitor.

MM 4.5-2CC: Prior to the issuance of grading or building permits, and for the duration of construction activities, a Construction Worker Environmental and Cultural Awareness Training Program shall be provided to all new construction workers within one week of employment at the project site, laydown area and/or transmission routes. The training shall be prepared and conducted by the qualified archaeologist and may include participation of the Native American monitor. The training may be video format. The qualified archaeologist shall be available to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must resume when construction activities resume. The training shall include, but not be limited to:

- a. A discussion of applicable cultural resources statutes, regulations and related enforcement provisions;
- b. An overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups, provided by the Native American monitor or tribal leader;
- c. A summary of the effects of the proposed project on cultural resources;
- d. Samples or visuals of artifacts that might be found in the project area;
- e. A discussion of what such artifacts may look like when partially or totally buried and then freshly exposed;
- f. A discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during construction;
- g. Instruction that in the event cultural resources are unearthed during ground-disturbing activities, the qualified archaeologist, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the site until the qualified archaeologist has evaluated the find, determined whether the find is culturally sensitive, and designs an appropriate short-term and long term treatment plan. The qualified archaeologist, in consultation with the California City Community Development Department and Native American monitor shall establish an appropriate protocols and procedures for minimizing impacts during construction and future impacts during project operation and maintenance;
- h. An informational guide that identifies the reporting procedures in the event of a discovery;

- i. Other information as deemed necessary by the qualified archaeologist or Native American monitor;
- j. An acknowledgement form signed by each worker indicating that environmental/cultural training has been completed;
- k. A sticker that shall be placed on hard hats indicating that the worker has completed the environmental/ cultural training. Construction workers shall not be permitted to operate equipment within the construction area unless they have attended the training and are wearing hard hats with the required sticker;
- l. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the California City Community Development Department.

MM 4.5-3CC:

In the event archaeological materials are encountered during the course of grading or construction for any construction components, the project contractor shall cease any ground-disturbing activities within 100 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 100-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 qualified archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The qualified archaeologist in consultation with the Native American monitor, if appropriate, 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 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 Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the City of California City, which may include data recovery or other appropriate measures. The City of California City 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. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified 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 City of California City Community Development Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-3KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC, 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, as defined in CEQA Guidelines Section 15064.5.

As discussed above under Impact 4.5-1, the archaeological field survey resulted in the recordation of 29 new isolated artifacts and 26 new sites: 11 prehistoric resources and 15 historic-era resources. Stantec archaeologists also revisited and updated 11 previously recorded resources. In total, 38 sites were evaluated (26 new sites and 12 previously recorded sites). Resource evaluations are summarized in Table 4.5-1, *Evaluation of Resources Recorded in the Project Area*. No resources were determined to be eligible for listing in the NRHP or CRHR based on the evaluations conducted.

However, project implementation would have the potential to impact unknown cultural resources during construction, operation, or decommissioning activities. To ensure avoidance of undiscovered archaeological resources, Mitigation Measures MM 4.5-1KC through MM 4.5-3KC and MM 4.5-1CC through MM 4.5-3CC would be implemented. Mitigation measures include avoidance or, if avoidance is not possible, appropriate mitigation of significant resources; preparation of a long-term management plan for significant resources; monitoring of ground-disturbing activities by a qualified archaeologist and Native American monitor; and employee environmental/cultural training. With implementation of mitigation measures, impacts to undiscovered archaeological resources would be reduced to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.5-1KC through MM 4.5-3KC.

City of California City

Implement Mitigation Measures MM 4.5-1CC through MM 4.5-3CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-3KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC, impacts would be less than significant.

Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.

There is no indication, either from the archival research results or the archaeological survey, that any particular location in the project area has been used for human burial purposes in the recent or distant past. However, given the sensitivity for buried archaeological resources, the project could inadvertently uncover or damage undiscovered human remains, which would result in a significant impact. Mitigation Measures MM 4.5-4KC and MM 4.5-4CC would mitigate potential impacts to less than significant.

Mitigation Measures

Kern County

MM 4.5-4KC: 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. The Kern County Planning and Natural Resources Department shall also be notified of the discovery. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). Per Public Resources Code Section 5097.98, the project operator 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, as prescribed in this section (Public Resources Code Section 5097.98), 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.

City of California City

MM 4.5-4CC: 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. The City of California City Community Development Department shall also be notified of the discovery. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources

Code (PRC) 5097.98 (as amended by Assembly Bill 2641). Per PRC Section 5097.98, the project operator 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, as prescribed in this section (PRC Section 5097.98), 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

Kern County

With implementation of Mitigation Measure MM 4.5-4KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.5-4CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects, zone changes, and general plan amendment discussed in Chapter 3, *Project Description* of this EIR, would have on cultural resources. The geographic area of analysis of cumulative impacts for cultural resources includes the Fremont Valley and western Antelope Valley. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because the similar environments, landforms, and hydrology would result in similar land-use—and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity. The area considered is large enough area to encompass any project effects 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 such resources. Multiple projects, including solar energy production facilities, are proposed throughout the Fremont Valley and western Antelope Valley. Cumulative impacts to cultural resources could therefore occur if other related projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

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, specific federal, state, and local laws are designed to protect such resources. These laws have led to the discovery, recordation, preservation, and curation of artifacts and historical structures. The proposed project, as well as all other projects in the area, are required to comply with these laws.

As described above, mitigation measures are proposed to reduce potentially significant project impacts to cultural resources during construction of the proposed project. Mitigation measures include avoidance or if avoidance is not possible, appropriate mitigation of significant resources; preparation of a long-term

management plan for significant resources; monitoring of ground-disturbing activities by a qualified archaeologist and Native American monitor; and employee environmental/cultural training. With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-3KC and MM 4.5-1CC through MM 4.5-3CC, significant project impacts would be avoided. Similarly, other cumulative projects would be required to avoid known resources through project design and/or to minimize potential adverse effects to such known or unknown resources to the extent feasible through implementation of mitigation measures. As such, significant cumulative impacts to archaeological or historical resources would not occur.

With regard to human remains, although project construction has the potential to disturb human remains, the implementation of Mitigation Measures MM 4.5-4KC and MM 4.5-4CC would ensure the appropriate protocol is followed with regard to identifying and handling human remains if discovered during project ground-disturbing activities. With implementation of Mitigation Measures MM 4.5-4KC and MM 4.5-4CC, impacts to human remains would be avoided. It is anticipated that, in conformance with local, state, and federal regulations, the cumulative projects considered would also be designed to minimize or avoid impacts to human remains or would implement similar mitigation to ensure that impacts would be reduced to the extent feasible. As such, significant cumulative impacts to human remains would not occur.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC.

City of California City

Implement Mitigation Measures MM 4.5-1CC through MM 4.5-4CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC, cumulative impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC, cumulative impacts would be less than significant.

4.6.1 Introduction

This section of the EIR analyzes the energy implications of the project, focusing on the following energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the project’s anticipated energy needs and conservation measures. Information in this section is based primarily on the *Kudu Solar Farm – Energy Consumption Technical Memorandum* prepared by HDR (HDR 2020) located in Appendix F, *Energy Consumption Technical Memorandum* of this EIR. In addition, the information found herein, as well as other aspects of the project’s environmental-related energy impacts, are discussed in greater detail elsewhere in this EIR, including in Chapter 3, *Project Description*, Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*.

This section provides the content and analysis required by Public Resources Code Section 21100(b)(3), and described in Appendix F to the *CEQA Guidelines*, which require that an EIR identify mitigation measures to minimize a project’s significant effects on the environment, including but not limited to measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F, *Energy Conservation*, states that the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project’s energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting, and Impact Analysis portions of the technical sections, as well as through mitigation measures and alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency 2018). Appendix G of *CEQA Guidelines* was amended to now include the analysis of energy. Previously included in Appendix F of the *Guidelines*, the Appendix G Checklist of *CEQA Guidelines* now provides criteria for the analysis of wasteful energy consumption and any conflicts with state or local energy efficiency plans.

4.6.2 Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources—including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources—into energy. The delivery of electricity involves a number of system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines, commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator’s capacity is typically rated in

megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services in the project area are provided by Southern California Edison (SCE). SCE obtains its energy supplies from power plants and natural gas fields in Northern California, as well as from energy purchased outside its service area and delivered through high-voltage transmission lines and pipelines. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants, and is fed into the electrical grid system serving Southern California.

SCE updates all load forecasts for gas and electricity services every year. Load growth forecasts for this area are currently determined using load growth projection tools that use a number of sources of data, including past peak loading, population, development characteristics, and temperature history information. Table 4.6-1, *Electric Power Mix Delivered to Retail Customers in 2019*, shows the electric power mix that was delivered to retail customers for SCE compared to the statewide power mix for 2019, the most recent year in which data is available.

Table 4.6-1. Electric Power Mix Delivered to Retail Customers in 2019

Energy Resource	SCE Power Mix	2019 CA Power Mix ²
Eligible Renewable	35.1%	31.7%
Biomass & biowaste	0.6%	2.4%
Geothermal	5.9%	4.8%
Small hydroelectric	1.0%	2.0%
Solar	16.0%	12.3%
Wind	11.5%	10.2%
Coal	0%	3.0%
Large Hydroelectric	7.9%	14.6%
Natural Gas	16.1%	34.2%
Nuclear	8.2%	9.0%
Other	0.1%	0.2%
Unspecified sources of power ¹	32.6%	7.3%
Total	100%	100%

Source: SCE 2019.
Notes:
1 - Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.
2 - Percentages are estimated annually by the California Energy Commission based on the electricity generated in California and net imports as reported to the Quarterly Fuel and Energy Report database and the Power Source Disclosure program.

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, which is measured in terms of cubic feet (cf), provides almost one-third of the State's total energy requirements. According to the US Energy Information Administration (EIA), California used approximately 2,154,030 million cubic feet of natural gas in 2019 (EIA 2020a). The majority of California's natural gas is consumed by industrial uses (37

percent), followed by electric power generation (28 percent) and residential uses (22 percent) (EIA 2020a). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90 percent of its supply of natural gas.

In California, natural gas consumption for energy use is often inversely related to solar energy production. Natural gas and solar are the two most prevalent sources of electricity generation in California; however, solar generation is non-dispatchable. Grid operators use natural gas and, to a lesser extent, hydroelectricity and electricity imports from neighboring areas, to balance changes in electricity demand (EIA 2020b). Output from solar power will peak and then plateau by midday, rapidly declining by the evening as the sun sets. As solar output declines, natural gas-fired generators often have to ramp up, or increase their output, considerably in the afternoon and early evening hours (EIA 2020b).

At the project level, Southern California Gas Company (SoCalGas) is the natural gas provider in Kern County; however, because the project site is currently undeveloped, there is not a known natural gas service for the project site. SoCalGas's service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Commission's (CEC) California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an average annual growth rate of negative 0.01 percent in SoCalGas's service territory between 2012 and 2024 (CEC 2014). Natural gas consumption is not projected to increase due to higher consumer utility prices and statewide natural gas efficiency standards and programs.

Transportation

According to the CEC, transportation accounted for nearly 37 percent of California's total energy consumption in 2014 (CEC 2017). In 2019, California consumed 15.6 billion gallons of gasoline and 3.1 billion gallons of diesel fuel (California Department of Tax and Fee Administration 2020). Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use (CEC 2020). However, the State is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (CEC 2020). The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC 2018). According to California Air Resources Board's (CARB) EMFAC2017 web database, Kern County's 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

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 implementing 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 2016 Integrated Energy Policy Report provides the results of the CEC’s assessments of a variety of energy issues facing California, including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California’s energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, update on trends in California’s sources of crude oil, update on California’s nuclear plants, and other energy issues.

California’s Renewables Portfolio Standard

The California Public Utilities Commission (CPUC) and the CEC jointly implement the Renewables Portfolio Standard (RPS) program (CPUC 2021). 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.

SB 350. In October 2015, Governor Brown signed SB 350, which expands and increases the target of the RPS program to 50 percent by the end of 2030.

SB 100. In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

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

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 criteria air pollutants emissions from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower, such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section

2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

California Environmental Quality Act

In accordance with CEQA and Appendix F, *Energy Conservation*, of the 2018 *CEQA Guidelines*, and to ensure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *CEQA Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F of the *Guidelines*, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans. 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 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.

California City General Plan

The goals, policies, and implementation measures in the California City General Plan (City of California City 2009) related to the conservation of energy resources are primarily applicable to land development projects. These goals and policies focus on promoting energy-efficient development designs and encouraging energy conservation measures included in the California Building Code (CCR Title 24). There are no General Plan goals, policies, and implementation measures that directly relate to utility-scale energy generation projects.

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 on the *Kudu Solar Farm – Energy Consumption Technical Memorandum* prepared by HDR (HDR 2020) located in Appendix F, *Energy Consumption Technical Memorandum* of this EIR.

Construction and Decommissioning

Electricity is not expected to be consumed in large quantities during project construction or decommissioning, as construction equipment and vehicles are typically diesel- or gas-powered, not electric. Electricity for construction would be provided by SCE and a hookup would be installed on the project site (and this hookup would also provide electricity on-site for the operational phase of the project); however, electricity usage from such connection is anticipated to be minimal (i.e., mostly for security lighting). Therefore, electricity associated with construction-related activities was not calculated.

Natural gas is not expected to be consumed in large quantities during project construction or decommissioning (i.e., no natural gas-powered equipment or vehicles). Therefore, natural gas associated with construction activities was not calculated.

Regarding transportation-related fuel consumption during construction or decommissioning, it is assumed that only diesel fuel would be used in off-road construction equipment and for haul trucks used during delivery of solar panels to or removal from the project site. On-road vehicles for construction workers are assumed to be solely powered by gasoline. The diesel and gasoline fuel consumptions were calculated using the carbon dioxide (CO₂) emissions contained in the *Air Quality and Greenhouse Gas Assessment* located in Appendix C-1 of this EIR and USEPA's default emission rates of 19.4 pounds of CO₂ per gallon of gasoline and 22.2 pounds of CO₂ per gallon of diesel (USEPA 2005). The fuel consumption calculations are provided in Appendix A of the *Energy Consumption Technical Memorandum* prepared for the project (available as Appendix F of this EIR).

Operation

The operational phase of the project would require electricity for multiple purposes, such as operation of the O&M building (i.e., electricity consumption from staff use of lighting, space heating and cooling units, general appliances, water heating) as well as project site lighting (i.e., roadway lighting and security lighting at access gates, inverter stations, and substations).

Natural gas is not expected to be consumed during project operations (i.e., no natural gas-powered equipment or vehicles). Therefore, natural gas associated with operation of the project was not calculated.

During operations, it is estimated that the project would result in consumption of gasoline associated with on-site and off-site vehicle trips. On-site vehicle trips would include the use of light pickup trucks, water trucks, and service vehicles. Off-site vehicle trips would include the use of passenger vehicles and light trucks used by employees to access the project site, delivery trucks, and service vehicles. It is expected that operational trips would require approximately 43 trips per day during weekdays and no trips during weekends. With an average trip length of 40 miles, the project would generate approximately 444,080 miles traveled per year; refer to Appendix C-1, *Air Quality and Greenhouse Gas Assessment*, of this EIR for the calculation and assumptions. The proposed project would not consume diesel during operations. The amount of gasoline consumed during project operations is calculated using the project's estimated emissions of CO₂e and USEPA's default emission rates of 19.4 pounds of CO₂ per gallon of gasoline. The CO₂e emissions estimates are provided in the air quality and GHG emissions report, available as Appendix C-1, *Air Quality and Greenhouse Gas Assessment*, of this EIR.

Thresholds of Significance

As established in Appendix G of the *CEQA Guidelines*, the Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria to determine that a project could potentially have a significant impact with respect to 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 construction or operation.
- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to energy, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation.

Construction and Decommissioning

Electricity

As stated above, electricity is not expected to be consumed in large quantities during construction- or decommissioning-related activities, as construction equipment and vehicles are not electric powered (the majority of construction equipment is either diesel- or gas-powered). Therefore, electricity associated with construction- or decommissioning-related activities was not calculated. Electricity for construction or decommissioning would be provided by SCE and a hookup would be installed on the project site (and this hookup would also provide electricity on-site for the operational phase of the project); however, construction or decommissioning-related electricity usage from this connection is anticipated to be minimal (i.e., mostly for security lighting), and the project would have a less than significant impact on electricity consumption.

Natural Gas

Natural gas is not expected to be consumed during construction-, decommissioning-, or operation-related activities by construction-related equipment (i.e., no natural gas-powered equipment or vehicles). Therefore, the proposed project would have no significant impact on natural gas consumption.

Gasoline and Diesel

Construction of the project would result in fuel consumption from the use of construction tools and equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the site. Project construction is expected to consume a total of approximately 640,000 gallons of diesel fuel from construction equipment and vendor, hauling, and water truck trips, and approximately 350,000 gallons of gasoline from construction worker vehicle trips.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a typical condition of the project. As shown in Table 4.6-2, *Fuel Consumption During Construction*, the gasoline consumed during construction represents approximately 0.09 percent of all gasoline sold within Kern County in 2018 (396 million gallons) (CEC 2019a). Further, as shown in Table 4.6-2, *Fuel Consumption During Construction*, the diesel consumed during project construction would represent approximately 0.6 percent of all diesel sold in Kern County in 2018 (108 million gallons) (CEC 2019a). These volumes represent a negligible and insignificant increase in countywide totals. In addition, there are no unusual project characteristics that would cause the use of construction equipment to be less energy efficient compared with other similar construction sites in other parts of the State.

Energy consumption associated with decommissioning activities are anticipated to be similar to construction activities. The consumption of fuels during construction and decommissioning would be irreversible. Although construction and decommissioning activities would be temporary, the project could result in a wasteful, inefficient, or unnecessary consumption of energy resources if available control measures are not implemented. The project does not propose any energy control measures during construction. As a result, this impact would be potentially significant. Implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-1CC, 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. Implementation of MM 4.3-1KC and MM 4.3-1CC would also ensure compliance with 13 CCR Section 2449 et seq., which imposes construction equipment idling restrictions. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. With implementation of this mitigation, construction-related fuel consumption by the project would not result in inefficient, wasteful, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

Table 4.6-2. Fuel Consumption During Construction

Fuel Consumption During Project Construction (gallons)	2018 Kern County Fuel Sales (gallons)	Project Fuel Consumption (% of Countywide Totals)
<i>Gasoline</i>		
350,000	396,000,000	0.09
<i>Diesel</i>		
640,000	108,000,000	0.6
Source: HDR 2020 (see Appendix F).		

Operation

Electricity

Electricity required during operation, such as lighting, heating and cooling equipment, general appliances, and water heating for the operations and maintenance building, and security lighting at energy storage facilities and access gates, would be more than offset by the electricity produced by the solar facility. As discussed in Section 4.8, *Greenhouse Gas Emissions*, of this EIR, construction and operation of renewable energy facilities would offset GHG emissions by replacing energy generated by natural gas power plants. Specifically, the project would generate approximately 1,139 GWh of electricity each year. This additional solar-generated energy would be added to the power grid and used in place of electricity generated by natural gas sources, and thus would directly support energy goals under SB 100 and would be consistent with CARB's 2017 Scoping Plan Update (see Impact 4.6-2 for information on the Scoping Plan). According to the CPUC, California's average residential electricity use is among the lowest in the nation, at 557 kWh per month or 6,684 kWh per year (CPUC 2015). This means that with the average residential use in California consuming 6,684 kWh (or 0.0067 GWh) of electricity annually, the project would generate enough electricity to power approximately 170,377 homes annually. Based on these considerations, the project would have a less than significant impact on electricity consumption.

Natural Gas

Natural gas is not expected to be consumed during operation-related activities by construction equipment (i.e., no natural gas-powered equipment or vehicles). Therefore, the proposed project would have a less than significant impact on natural gas consumption.

Diesel and Gasoline

During operation, it is estimated that the operational and maintenance activities would consume approximately 18,421 gallons of gasoline annually. The proposed project would not consume diesel during operation. The gasoline consumed during operations represents approximately 0.004 percent of all gasoline sold within Kern County in 2018 (396 million of gallons) (CEC 2019a) (Appendix F of this EIR). Operation-related fuel consumption by the project would not result in inefficient, wasteful, or unnecessary energy use. The proposed project would have a less than significant impact on gasoline and diesel consumption.

Mitigation Measures

Kern County

Implement site construction Mitigation Measure MM 4.3-1KC as provided in Section 4.3, *Air Quality*, of this EIR.

City of California City

Implement site construction Mitigation Measure MM 4.3-1CC as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.3-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.3-1CC, impacts would be 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.

Construction

Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and NHTSA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and will result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25-percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations (13 CCR Section 2485) regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that can increase energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy. Project construction activities would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Future decommissioning activities would be similar to and no more intensive than initial construction activities and could occur over a shorter duration of time. As such, energy consumption would be similar to and possibly lower than the initial construction requirements and impacts would also be less than significant.

Operations

The CARB *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan), which is discussed further in Section 4.8, *Greenhouse Gas Emissions*, of this EIR, was updated in 2017 to address the 2030 GHG reduction target established by SB 32 by establishing a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030, as compared with 1990 GHG emissions levels. One of the key programs that the 2017 Scoping Plan builds on includes increasing the use of renewable energy in the state. In order to meet the SB 32 GHG emissions reduction mandate of 40 percent below 1990 levels by 2030, the 2017 Scoping Plan relies on achievement of the 50 percent RPS by 2030. SB 100 further

increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. By generating approximately 1,139 GWh of electricity each year that would be added to the power grid, the project and other similar renewable energy projects are essential to achieving the RPS. Further, because the project would generate electricity from a renewable source of energy, operation of the project is expected displace energy production that would otherwise be generated by non-renewable energy facilities using a petroleum fuel, natural gas or coal. As discussed in Section 4.8, *Greenhouse Gas Emissions*, of this EIR, approximately 398,439 metric tons (MTCO_{2e}) of net GHG emissions would be avoided by the implementation of the project annually. This GHG emissions avoided would assist in the attainment of the state's goal to reduce GHG emissions to 40 percent below 1990 levels by 2030. The reduction in GHG emissions is a direct result of increasing the share of renewable energy available to investor-owned utilities required to meet the RPS. The project directly aligns with the goals of RPS by generating solar-generated electricity.

Furthermore, as the project would have an electric power generating capacity of approximately 500 MW alternating current, 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 could result in a reduction of GHG emissions, no mitigation measures are required. Additionally, development of the project would be consistent with the goal and related policies in the Energy Element of the Kern County General Plan to encourage safe and orderly commercial solar development, like the project.

The Office of the California Attorney General has listed examples of types of mitigation measures that local agencies may consider to further 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. Specifically, the project complies with the Attorney General's recommended measures:

- Install solar, wind, and geothermal power systems and solar water heaters.
- Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use (State of California Department of Justice, Attorney General's Office 2010).

As the project would generate up to 500 MW of renewable energy, including up to 600 MWh of energy storage, the project would be consistent with the Office of the California Attorney General's recommended measures to reduce GHG emissions. Therefore, the project would not conflict with or obstruct the adoption of the Attorney General's recommended measures regarding renewable energy.

As shown in Table 4.11-2, *Consistency Analysis with Kern County General Plan*, in the Section 4.11, *Land Use and Planning*, development of the project would be consistent with the goals and related policies in the Energy Element of the Kern County General Plan to encourage safe and orderly development of commercial solar facilities and transmission lines.

With regard to the operations and maintenance building proposed on the project site, this building would be subject to the Building Energy Efficiency Standards as required by 24 CCR Part 6. The Building Energy

Efficiency Standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new power plants. Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the project's energy conservation measures when the project's building plans are submitted. These measures could include insulation; use of energy-efficient heating, ventilation, and air conditioning equipment; solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; incorporation of skylights; and other measures. The project would also be subject to CALGreen (24 CCR Part 11), which requires 65 percent construction solid waste diversion.

Overall, because the main objectives of the project are to assist California investor owned utilities in meeting their obligations under California's RPS program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020, as required by AB 32, and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan, as well as applicable federal, State, and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS. Therefore, this impact would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts occur when the incremental effects of a project are significant when combined with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. As presented in Chapter 3, *Project Description*, of this EIR, Table 3-3, *Cumulative Projects List*, there are 14 related projects within Eastern Kern County located within the vicinity of the project site.

Cumulative projects in the project area largely consist of utility-scale solar power generation facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the CARB Scoping Plan. To meet the AB 32 GHG emissions reduction mandate, the Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by

2020. To meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 60 percent of California's energy coming from renewable sources by 2030 and 100 percent renewable sources by 2045. The project and other similar projects are essential to achieving the RPS.

The main contribution of energy consumption from the project would be from construction equipment usage, haul truck trips, and employee trips during the construction phase and water truck trips, maintenance trips, and employee trips during project operation of the project. Cumulative impacts involving operational energy consumption would, therefore, consist mainly of minor levels of transportation-related energy consumption. Energy consumption during project construction would be finite and temporary, and would not be wasteful, inefficient, or unnecessary, as discussed above. Similarly, energy consumption during project decommissioning would also be finite and temporary, and not wasteful or inefficient. Further, the electricity required from the existing SCE grid during project operation associated with lighting, heating and cooling equipment, general appliances, and water heating for the operations and maintenance building(s) would be greatly offset by the electricity produced by the various renewable energy projects.

Although the project would result in a contribution to cumulative energy consumption in California, construction of the project would implement Mitigation Measures MM 4.3-1KC and MM 4.3-1CC, as provided in Section 4.3, *Air Quality*, of this EIR, which would require the use of energy-efficient and alternatively fueled equipment during project construction. In addition, operation of the project could offset emissions from the electricity generation sector. The project would generate solar-generated electricity that would be added to the power grid and be used in place of electricity generated by natural gas sources. Based on the project's projected annual electricity generation and the GHG emissions generated due to natural gas combustion to generate the same level of electricity, the project has the potential to displace 398,439 MTCO₂e per year.

As stated above, a majority of the related projects are solar or wind farms that would have energy consumption characteristics similar to the proposed project during construction, operation, and decommissioning, which would be offset by renewable energy generation during operation. Specifically, the other related projects would also be required to comply with federal, State, and regional regulations relating to energy efficiency and fuel consumption during construction, such as the USEPA and NHTSA fuel efficiency standards for medium- and heavy-duty trucks and CARB's regulations regarding heavy-duty truck idling limits. The related projects would also have minimal operational trips and electricity usage given the general nature of renewable energy generation facilities. Further, the related projects would be consistent with the CARB Scoping Plan / SB 32 GHG emissions reduction goals, as well as local goals and policies regarding renewable energy generation. Overall, cumulative impacts involving energy consumption would not result in wasteful or inefficient energy uses. Further, the project, combined with other existing and proposed utility scale renewable energy projects, would have a considerable beneficial impact in terms of implementing State and regional renewable energy plans. Thus, the project would not have a cumulatively considerable impact on energy consumption, would not conflict with any renewable energy plans, and long-term cumulative impacts would be less than significant.

Mitigation Measures

Kern County

Implement site construction Mitigation Measure MM 4.3-1KC, as provided in Section 4.3, *Air Quality*, of this EIR.

City of California City

Implement site construction Mitigation Measure MM 4.3-1CC, as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.3-1KC, cumulative construction impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.3-1CC, cumulative construction impacts would be less than significant.

4.7.1 Introduction

This section describes the affected environment and regulatory setting for geology and soils. It also describes the impacts on geology and soils that would result from implementation of the proposed project, and identifies mitigation measures that would reduce these impacts, if applicable. This section also provides an analysis of the potential impacts to paleontological resources as a result of the project. Information in this section is based primarily on the *CEQA Level Geotechnical Study* prepared by Stantec (Stantec 2019a) and the *Paleontological Inventory Report* prepared by Paleo Solutions, Inc. (Paleo Solutions, Inc. 2020) located in Appendix G-1 and Appendix G-2 of this EIR, respectively.

4.7.2 Environmental Setting

Geological Setting

Regional Geological Setting

The proposed project is located in the western portion of the Mojave Desert Geomorphic Province which is characterized by block-faulted mountain ranges and intervening valleys. The Mojave Desert is characterized by broad alluvial fans that have formed along the transition of the ranges and valleys. The western part of the Mojave Desert is bounded by two major active faults: the Garlock Fault to the north and the San Andreas Fault to the south.

Kern County is located in one of the more seismically active areas of California and may at any time be subject to moderate to severe ground shaking. This hazard exists because elastic strains accumulate deep within the earth, resulting in movement along a fracture zone that releases large amounts of energy. Seismicity is the geographic and historical distribution of earthquakes, including their frequency, intensity, and distribution. Seismic hazards include surface rupture, ground shaking, liquefaction, landslides, subsidence, and expansive soils.

Local Geological Setting

Regional Faults

The surface topography within the region is influenced by two sets of faults, a prominent northwest to southeast trending set (San Andreas Fault) and a secondary east to west trending set (Garlock Fault).

San Andreas Fault

The San Andreas Fault is a right-lateral, strike-slip fault that extends more than 700 miles from the Gulf of California to Cape Mendocino in Northern California. The segment of the San Andreas Fault within Kern County is relatively short compared to its 700-mile length. However, it is important because this segment breaks from the system's predominantly 350 degree trending direction between the San Luis Obispo County and Los Angeles County line. This is an active fault capable of damaging the project area. Areas along this fault have been designated by the State of California as Alquist-Priolo Special Studies Zones. Several historic earthquakes on the San Andreas Fault Zone have produced significant seismic shaking in the vicinity of the proposed project.

Garlock Fault

The Garlock Fault extends eastward from its point of intersection with the San Andreas Fault, near Lebec, for a distance of nearly 150 miles. The fault is located approximately 35 miles southeast of downtown Bakersfield. The Garlock Fault Zone is one of the most obvious geologic features in Southern California, clearly marking the northern boundary of the area known as the Mojave Block, as well as the southern ends of the Sierra Nevada Mountain Range and the valleys of the westernmost Basin and Range Province. While no earthquake has produced surface rupture on the Garlock Fault in historical times, there have been several sizable quakes recorded along the Garlock Fault Zone. The most recent was a magnitude 5.7 event near the town of Mojave on July 11, 1992. At least one section of the fault has shown movement in recent years. This is an active fault capable of damaging the project area.

Geologic Hazards

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 breaks through to the surface. Fault ruptures almost always follow preexisting faults that are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking. Fault creep is the slow, continuous aseismic fault deformation of the earth's crust. Fault rupture is considered to be most likely to occur along the traces of identified active faults.

The project site is not located within a currently mapped Alquist-Priolo Special Studies Fault Zone (Stantec 2019a). The estimated distance of the project site to the nearest expected surface expression of major active faults is presented in Table 4.7-1, *Faults in Proximity to the Project Site*. The nearest active faults are the Garlock (West) and Garlock (Center) Faults, located approximately 4 miles northwest and 7 miles northeast of the project site, respectively. The Garlock (Center) Fault trace trends in a northeast-southwest direction and projects toward the southeast portion of the project site. The Garlock (Center) Fault is considered to be the fault most likely to cause surface rupture at the project site. Based on the fault's distance from the project site and since the fault projects toward the project, the potential for surface fault rupture to occur on the project site is moderate.

Table 4.7-1. Faults in Proximity to the Project Site

Fault	Distance (miles) ^[1]	Maximum Moment Magnitude
Garlock (West)	4.2	7.5
Garlock (Center)	7.2	7.7
South Sierra Nevada	7.9	7.5
Lenwood-Lockhart-Old Woman Springs	13.5	7.5
Helendale – South Lockhart	24.0	7.4
South San Andreas	29.6	8.1

Source: Stantec 2019a (see Appendix G-1).
Notes: ^[1] Measured from approximate center of site.

Ground Shaking

Strong ground shaking from an earthquake can result in damage associated with landslides, ground lurching, structural damage, and liquefaction. The Southern California region is characterized by, and has a history of, fault stress and associated seismic activity. Earthquakes are classified by their magnitude, a measure of the amount of energy released during an event. During a seismic event, the project site may be subjected to high levels of ground shaking due to proximity to active faults in the area. The largest fault in the area is the San Andreas Fault, which is considered active. Strong ground shaking can be expected at the project site during moderate to severe earthquakes in the general region. However, this phenomenon is common to most areas in Southern California.

Information published by the United States Geologic Survey (USGS) indicates the peak ground acceleration (PGA) with a 2 percent probability of being exceeded at the site in 50 years is 0.56g, where g is the acceleration due to gravity determined in accordance with the U.S. Seismic Design Maps website (Stantec 2019a).

Faults located within the project site vicinity have the potential to cause ground shaking to occur on the project site; the magnitude of ground shaking experienced onsite is dependent on the distance to causative faults and the earthquake magnitude (or measure of the amount of energy released during an earthquake event). Table 4.7-2, *Historic Earthquakes in Project Area Vicinity*, shows some of the significant historical earthquakes that have occurred in the region and their magnitude.

Table 4.7-2. Historic Earthquakes in Project Area Vicinity

Earthquake (Year)	Earthquake Magnitude
Mojave (1992)	5.7
Tejon Ranch (1988)	5.4
Kern County (1952)	7.5
Ridgecrest (2019)	7.1, 6.4, and 5.4

Source: Southern California Earthquake Data Center (SCEDC) 2020.

The fault with likely the most potential to affect the site from a design standpoint, is the Garlock Fault due to its location and earthquake magnitude potential. The Garlock Fault has a maximum moment magnitude earthquake potential of 7.1 which is enough to cause substantive ground shaking at the site. However, seismic events on other active faults of the region would also have the potential to cause ground shaking at the project site.

Liquefaction

Liquefaction of saturated sandy soils is generally caused by the sudden decrease in soil shear strength due to vibration. During seismic shaking, typically caused by an earthquake, the soil mass is distorted, and inter-particle stresses are transferred from the soil particles to the pore water. As pore pressure increases the bearing capacity decreases and the soil may behave temporarily as a viscous fluid (liquefaction) and, consequently, loses its capacity to support structures that may be present.

Engineering research of soil liquefaction potential indicates that generally three basic factors must exist concurrently in order for liquefaction to occur, namely:

- a) A source of ground shaking, such as an earthquake, capable of generating soil mass distortions.
- b) A relatively loose sandy soil fabric exhibiting a potential for volume reduction.
- c) A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

The project site is not located within a current, mapped California Liquefaction Hazard Zone. In addition, groundwater in the site vicinity is expected to be approximately 133 feet below the ground surface. Based on the near surface soil conditions and depth to groundwater, the potential for liquefaction related ground failure at the project site, including liquefaction, is low (Stantec 2019a).

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “free” face such as an open body of water, channel, or excavation. This movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally toward the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free.

Due to the low potential for liquefaction, the depth of groundwater, and the fact that the project site is not located near free faces or bodies of water, the potential for lateral spreading is considered low (Stantec 2019a).

Subsidence

Groundwater levels in the Antelope Valley adjacent to the east of the Fremont Valley have declined more than 270 feet since the 1970s in some parts of the groundwater basin, especially near the City of Lancaster. These groundwater level declines have caused the aquifer system to compact, resulting in land subsidence. Land subsidence within the Antelope Valley has been most recently evaluated by the USGS through the use of Interferometric Synthetic Aperture Radar between 1992 and 2009. Based on these recent studies, the project site is not within an area that has sustained measurable subsidence due to groundwater draw down. Due to the depth of groundwater and the fact that the site is not located in a mapped subsidence area, the potential for subsidence is considered low (Stantec 2019a).

Expansive Soils

Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). The near-surface soils encountered during the geotechnical investigation are mostly sandy soils whose expansion potential is considered low (Stantec 2019a).

Landslides

The project site is relatively flat, with a topographic gradient less than 2 percent. Permanent slopes steeper than 5:1 (horizontal to vertical) or higher than 5 feet are not anticipated for the project. Therefore, the potential for landslides to occur on or adjacent to the project site is considered low.

Erosion

Soil erosion occurs when surface materials are worn away from the earth's surface due to land disturbance and/or natural factors such as wind and precipitation. The potential for soil erosion is determined by characteristics including texture and content, surface roughness, vegetation cover, and slope grade and length. Wind erosion typically occurs when fine-grained non-cohesive soils are exposed to high velocity winds, while water erosion tends to occur when loose soils on moderate to steep slopes are exposed to high-intensity storm events. Soil is naturally removed from the surface of the earth by water or wind action at close to the same rate that it is produced. However, human activities such as agriculture and development can accelerate natural soil erosion rates.

The project site is predominantly underlain by coarse-grained soils. Such soils are potentially susceptible to erosion or the loss of topsoil due to surface water flows (Stantec 2019a).

Paleontological Setting

Paleontological Resources

Significant paleontological resources are fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well-represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible.

Paleontological Sensitivity

Paleontological sensitivity is determined by rock type, history of the geologic unit in producing significant fossils, and previously recorded fossil localities from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from any one specific survey. The Society of Vertebrate Paleontology (SVP) system outlined in the SVP *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* is the generally accepted paleontological sensitivity classification scheme for projects on non-federal lands in California.

The SVP describes sedimentary rock units as having high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The SVP sensitivity categories are described below.

High Potential. Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rock units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcanoclastic formations (e.g., ashes or tephtras) and some low-grade metamorphic rocks that contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

Undetermined Potential. Rock units for which little information is available concerning their paleontological content, geologic age, or depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource mitigation program can be developed. In cases where no subsurface data is available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

Low Potential. Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule (e.g., basalt flows or recent colluvium). Rock units with low potential typically do not require implementation of mitigation measures to protect fossils.

No Potential. Some rock units have no potential to contain significant paleontological resources such as high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection or implementation of mitigation measures relative to paleontological resources.

Geology and Paleontology Sensitivity of the Project Area

Geologic mapping indicates that the project area is primarily underlain by Holocene-age younger alluvial gravel, sand, and silt of undissected valley fills derived from adjacent higher ground (Holocene-age younger alluvium; Qa) with a small amount of Pleistocene-age fanglomerate, gravel, sand, and silt of dissected older valley fills and alluvial fans, derived from adjacent highlands (Pleistocene-age older alluvium; Qoa) within

the southeastern portion of the project area. Additionally, Pleistocene-age older alluvium (Qoa) often occurs at depth beneath Holocene-age younger alluvium or occurs as a mixture of undifferentiated alluvium with these younger deposits within the Mojave Desert Geomorphic Province (see Appendix G-1).

The Potential Fossil Yield Classification (PFYC) system, developed by the Bureau of Land Management, was applied to the results of the analysis of existing data. Pleistocene-age older alluvium (Qoa) has a moderate paleontological potential (PFYC 3). Holocene-age younger alluvium (Qa) is estimated to be less than 11,000 years old and has a low paleontological potential (PFYC 2), because these deposits are too young to contain in-situ fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential, which may be impacted at depth.

Records Search

A records search for paleontological locality data within the project area and the vicinity was obtained from the Natural History Museum of Los Angeles County. According to the records search, no vertebrate fossil localities have been previously recorded within the project area. However, there are three vertebrate fossil localities recorded in the project vicinity from similar sedimentary deposits as those that likely occur at depth in the project area. Literature and database reviews also identified numerous vertebrate fossils recovered from Pleistocene-age older alluvium (Qoa) and other Pleistocene-age sedimentary deposits elsewhere in Kern County and Southern California (Paleo Solutions, Inc. 2020).

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.

CEQA is the major environmental statute that guides the design and construction of projects on non-federal 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 as discussed below.

Federal

Clean Water Act (Erosion Control)

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to 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), which includes best management practices (BMPs) to regulate stormwater runoff, including

measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.10, *Hydrology and Water Quality*.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1977 to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those that would be applicable to the proposed project.

Paleontological Resources

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands or involves a federal agency license, permit, approval, or funding. The first of these is the Antiquities Act of 1906 (54 United States Code [USC] 320301-320303 and 18 USC 1866(b)), which calls for protection of historic landmarks and historic and prehistoric structures, as well as other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act both establishes a permit system for the disturbance of any object of antiquity on federal land and also sets criminal sanctions for violation of these requirements. The Antiquities Act was extended to specifically apply to paleontological resources by the Federal-Aid Highway 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, while Code of Federal Regulations Title 40, Section 1508.2 identifies paleontological resources as a subset of scientific resources. The Paleontological Resources Preservation Act (Title VI, Subtitle D of the Omnibus Land Management Act of 2009) is the primary piece of federal legislation.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act offers provisions of paleontological resources identified on federal, Native American, or state lands and guidance for their management and protection, and promotes public awareness and scientific education regarding vertebrate fossils. The law also requires federal agencies to develop plans for inventory, collection, and monitoring of paleontological resources and

establishes stronger criminal and civil penalties for the removal of scientifically significant fossils on federal lands.

State

Alquist-Priolo Earthquake Fault Zoning Act (1972)

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. In accordance with this law, the California Geological Survey maps active faults and designates Earthquake Fault Zones along mapped faults. Three basic types of faults exist: active, potentially active, and inactive. Historic- and Holocene-age faults are considered active; Late Quaternary- and Quaternary-age faults are considered potentially active; and pre-Quaternary-age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be “sufficiently active” and “well defined” by detailed site-specific geologic explorations to determine that building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy, such as an operation and maintenance building, is subject to review under the Alquist-Priolo Act, and any structures for human occupancy must be located at least 50 feet from any active fault.

Seismic Hazards Mapping Act (1990)

In accordance with Public Resources Code, Chapter 7.8, Division 2, the California Department of Conservation, Division of Mines and Geology (now the California Geological Survey [CGS]) is directed to delineate Seismic Hazard Zones. The purpose of this act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS 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 development projects within seismic hazard zones.

California Building Code (2019)

The State of California provides minimum standards for building design through the California Building Code (CBC). The CBC is based on the Uniform Building Code (UBC) which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for conditions unique to California; however, the International Building Code (IBC) replaced the UBC in 2000. In accordance with the CBC, a grading permit is required if more than 50 cubic yards of soil is moved during implementation of a proposed project. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures.

The 2019 edition of the CBC is based on the 2018 IBC published by the International Code Council. The code is updated triennially, and the 2019 edition of the CBC was published by the California Building Standards Commission in 2019, and took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-10, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such

as wind loads) for inclusion into building codes. A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. Expansive soils are defined in the CBC as follows:

1803.5.3 Expansive Soil. In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2, and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D 4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.
4. Expansion index greater than 20, determined in accordance with ASTM D 4829.

Public Resources Code Section 5097.5 and Section 30244

The State of California Public Resources Code (Chapter 1.7), Sections 5097.5 and 30244, include additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, and define the excavation, destruction, or removal of paleontological “sites” or “features” from public lands without the express permission of the jurisdictional agency as a misdemeanor. As used in Section 5097, “state lands” refers to lands owned by, or under the jurisdiction of, the state or any state agency. “Public lands” is defined as lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, in cooperation with the CWA, established the SWRCB. The SWRCB and the nine RWQCBs are responsible for protecting California’s surface water and groundwater supplies. Section 13000 of the act directs each RWQCB to develop Water Quality Control Plans for all areas in its region, to designate the beneficial uses of California’s rivers and groundwater basins; these plans are the basis for each board’s regulatory program.

The Basin Plan gives direction on the beneficial uses of state waters in Region 6, describes the water quality that must be maintained to support such uses, and includes programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Lahontan RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges may affect water quality. These requirements are state Waste Discharge Requirements for discharge to land or federally delegated NPDES permits for discharges to surface water. Responsibility for implementing CWA Sections 401–402 and Section 303(d) is also outlined in the Porter-Cologne Water Quality Control Act.

State Regional Water Quality Control Board, Stormwater General Construction Permit

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs in the major watersheds of the state. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California’s waters.

In 1999, the state adopted the NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction Activities General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The General Construction Permit generally requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent for coverage, developing a SWPPP, and implementing best management practices to address construction site pollutants if the project is deemed to discharge into a water of the United States. However, as the project site is in a terminal drainage area of Kern County (e.g., does not drain to a waters of the United States), NPDES coverage is not expected to be required as described in further detail in Section 4.10, *Hydrology and Water Quality*.

The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list the best management practices (BMP) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Enrollment under the General Construction Permit is through the Stormwater Multiple Application and Report Tracking System. Additionally, the SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through the individual regional boards.

California Environmental Quality Act (CEQA)

Appendix G of the State CEQA Guidelines (California Code of Regulations Title 14, Chapter 3) provides an Environmental Checklist of questions intended to guide analysis pertaining to project-level impacts to geology and soils and paleontological resources.

A project would have a significant impact to geology and soils under CEQA if it would place people in an area with significant geologic hazard and would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death. Impacts to geology and soils also include the loss of topsoil from a project site; locating a project on a geologic unit or soil that is unstable, or that would become unstable as a result of the project; locating a project on expansive soil; or, on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available.

CEQA does not define “a unique paleontological resource or site.” However, the Society of Vertebrate Paleontology has defined a “significant paleontological resource” in the context of environmental review. The SVP defines a significant paleontological resource as:

Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) [p. 11] (SVP 2010).

The loss of significant paleontological resources would be a significant impact under CEQA. The CEQA lead agency is responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes.

Local

Construction and operation of the solar facility would be subject to policies and regulations identified within the Kern County and City of California City General Plans, Kern County and City of California City Zoning Ordinances, and the Kern County Code of Building Regulations, which include policies 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 and City of California City General Plans for geology and soils that are applicable to the proposed 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. 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 are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Conservation, and Open Space

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.

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. General Provisions

1.10.1. Public Services and Facilities

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.

1.10.3 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 Measure

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Chapter 4: Safety Element

4.3. Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

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 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.

Implementation Measures

Measure D: Discretionary actions will be required to address and mitigate impacts from inundation, land subsidence, landslides, high groundwater areas, liquefaction and seismic events through the CEQA process.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan**Chapter 5. Open Space and Conservation Element****5.15 Conservation Goals, Policies, and Implementation Measures****Policy**

- Prohibit use of septic systems in areas where it has been determined to be unsuitable for such systems and as described in City Resolution No. 08-01-1941.

Chapter 6. Safety Element**6.5 Geology and Seismic Hazards Goals, Policies, and Implementation Measures****Goals**

- Protect the health, safety, and welfare of the community from hazards related to seismic activity.

Policies

- Development shall be prohibited in areas where measures to correct identified geologic or seismic hazard are not feasible.
- Minimize the potential damage to structures and loss of life that could result from earthquakes.
- Safety measures required by the Uniform Building Code for Seismic Zone 4 for construction of new buildings are hereby incorporated by reference.

Implementation Measures

S-1: The City shall require that all new development be subject to a preliminary geotechnical report to identify potentially hazardous geologic and soils conditions including the potential for seismic hazards. If the preliminary geologic report indicates that geologic or soils conditions could be unstable, a geotechnical investigation shall be prepared indicating the suitability of any proposed

or additional development on the site and any corrective action needed to prevent structural defects or ground failure. The geotechnical investigation shall analyze: seismic hazards; geologic hazards; depth to groundwater; soil conditions (texture, consistency, structure, permeability, shrink-swell potential, strength); and the percentage of slopes and the potential for landslides.

- S-2: The City shall require geotechnical engineering studies for development proposals on properties in seismically hazardous areas (as identified on seismic hazard atlas or Alquist-Priolo maps) to consider the design and intensity of the proposed use in relation to the potential seismic risk. This shall include the potential for the project to be subject to fault rupture, ground failure including liquefaction or subsidence or earthquake-induced landslides.

Kern County Code of Building Regulations (Title 17 of the Ordinance Code of Kern County)

Chapter 17.08, Kern County Building Code

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2019 Edition, with some modifications and amendments. The entire County is located in Seismic Zone 4, a designation previously used in the UBC to denote the areas of highest risk for earthquake ground motion. California has an unreinforced masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted.

Chapter 17.28, Kern County Grading Code

The purpose of the Kern County Grading Code is to safeguard life, limb, property, and the public welfare by regulating grading on private property. All requirements of the Kern County Grading Code would be applied during implementation of the proposed project. All required grading permit(s) would be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

Section 17.28.140C, Erosion Control

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 Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the applicant to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

1. All stormwater is retained onsite and no stormwater runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All 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 one to five acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County Public Health Services On-site Wastewater Treatment System Permitting

The Kern County Public Health Services Department is responsible for permitting, inspecting, and approving on-site wastewater treatment systems, including septic tank wastewater disposal systems. The agency provides leach line requirements, seepage pit requirements, percolation testing standards, and other regulations for land development related to wastewater treatment systems.

4.7.4 Impacts and Mitigation Measures

Methodology

Potentially significant impacts relative to geology and soils associated with the project site were identified based on a review of existing literature, the *CEQA Level Geotechnical Study* prepared by Stantec in 2019 (see Appendix G-1), and available data, including the Kern County General Plan. The *CEQA Level Geotechnical 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 area were evaluated based on an analysis of existing paleontological data. The three components of the analysis of existing data included a geologic map review, a literature search, and an institutional record search. The *Paleontological Inventory Report* located in Appendix G-2 of this EIR, provides the results of the paleontological evaluation, including existing subsurface paleontological conditions within the project area and an analysis of the potential impacts to previously undiscovered paleontological resources as a result of project implementation.

A significant impact to paleontological resources would include the loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region. Direct impacts to paleontological resources primarily concern the potential destruction of previously undiscovered, 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. This would constitute a significant impact. However, direct impacts can be mitigated to a less than significant level through the implementation of appropriate 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 on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

Thresholds of Significance

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

A project would have a significant impact 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:
 1. 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
 2. Strong seismic ground shaking
 3. Seismic-related ground failure, including liquefaction
 4. Landslides

- b) Results in substantial soil erosion or the loss of topsoil.
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect 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.
- f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to geology and soils, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

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.

Solar Facility

The project is located in the highly seismic, Southern California region within the influence of several fault systems, including the San Andreas and Garlock Fault systems. However, it is not located within a State of California Alquist-Priolo Earthquake Fault Zone. The nearest active faults are the Garlock (West) and Garlock (Center) Faults, located approximately 4 miles northwest and 7 miles northeast of the project site, respectively. The Garlock (Center) Fault trace trends in a northeast-southwest direction and projects toward the southeast portion of the project site. The Garlock (Center) Fault is considered to be the fault most likely to cause surface rupture at the project site. Based on the fault's distance from the project site and since the fault projects toward the project site, the potential for surface fault rupture to occur on the project site is moderate.

The proposed project may include one or more O&M building of approximately 40 feet by 80 feet in size, with associated on-site parking. The O&M building would include office space and storage space for spare parts and materials for the day-to-day operations and maintenance of the facility. The project could require an operational staff of up to 20 full-time employees during normal weekday working hours. Typically, the

majority of the staff would work during the day shift (sunrise to sunset) and the remainder during the night shifts and weekend. Each employee shift would consist of approximately 5 persons, stationed at the O&M building. The solar facility would be monitored remotely 24 hours per day, seven days a week. Personnel present during the construction, operation, and decommissioning phases of the proposed project would not be exposed to substantially increased fault rupture hazards as a result of project implementation beyond those that generally exist in the entire project region. Moreover, construction work would not exacerbate any known fault conditions and would not trigger a surface fault rupture, as no faults have been identified on-site.

Construction of the solar facility would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the California City Building Code. Kern County and the City of California City have adopted the CBC 2019 Edition (CCR Title 24), which imposes substantially the same requirements as the International Building Code (IBC), 2018 Edition, with some modifications and amendments. These requirements would ensure that project structures comply with minimum standards related to structural strength and general stability. Therefore, given the absence of any known active faults in the project area and required compliance with the Kern County Building Code and the California City Building Code, impacts related to fault rupture would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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.

Solar Facility

As described above, the project is located in a highly seismic region within the influence of several fault systems, including the San Andreas and Garlock Fault systems that are capable of generating ground motions that could affect the project area. The project proponent would be required to design project infrastructure to withstand substantial ground shaking in accordance with applicable CBC and IBC seismic design standards, Kern County Building Code, Chapter 17.08 standards, California City Building Code,

and as recommended by a California licensed professional geotechnical engineer in the site-specific geotechnical review.

Prior to the issuance of grading permits, the project proponent would be required to retain a licensed geotechnical engineer to design the solar facility to withstand probable seismically induced ground shaking at the site. 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 by the California licensed professional geotechnical engineer in accordance with California and Kern County Building Code and California City Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural design 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 and City of California City Community Development Department. Conformance with building code requirements and local agency enforcement would reduce impacts from ground shaking to less than significant.

In addition, Mitigation Measures MM 4.7-1KC and MM 4.7-1CC would be implemented to require that a geotechnical study to evaluate on-site soil conditions and geologic hazards be prepared by a qualified geotechnical engineer. Further, Mitigation Measure MM 4.7-1KC and MM 4.7-1CC would require that the proponent design the 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 Kern County and California City Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department and City of California City Building Inspection Department. Final design requirements would be provided to the on-site construction supervisor and the Kern County and California City Building Inspectors to ensure compliance. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department and City of California City Community Development Department.

Adherence to the requirements of the Kern County Building Code, California City Building Code, IBC, and CBC, in combination with implementation of Mitigation Measures MM 4.7-1KC and MM 4.7-1CC would ensure that seismic hazards would be minimized. 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 that could result from an earthquake event. Thus, with implementation of the above-described measures, project structures and personnel present during the construction, operation, or decommissioning phases of the project would not be exposed to substantial adverse effects, including the risk of loss, injury, or death resulting from strong seismic ground shaking. Impacts would be less than significant.

Mitigation Measures

Kern County

MM 4.7-1KC: Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of

the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site.

- a. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to the following:
 1. Location of fault traces and potential for surface rupture and ground shaking potential;
 2. Maximum considered earthquake and associated ground acceleration;
 3. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows;
 4. Stability of any existing or proposed cut-and-fill slopes;
 5. 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; and,
 9. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground and any seismic hazards.
- b. The project proponent/operator shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid siting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, alternate setback distances may be proposed.
- c. The final geotechnical study shall be submitted for review and approval by the Kern County Public Works Department. The Kern County Public Works Department shall evaluate final facility siting design prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the 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.

City of California City

MM 4.7-1CC: Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of

the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site.

- a. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to the following:
 1. Location of fault traces and potential for surface rupture and ground shaking potential;
 2. Maximum considered earthquake and associated ground acceleration;
 3. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows;
 4. Stability of any existing or proposed cut-and-fill slopes;
 5. 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; and,
 9. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground and any seismic hazards.
- b. The project proponent/operator shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid siting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, alternate setback distances may be proposed.
- c. The final geotechnical study shall be submitted for review and approval by the City of California City Public Works Department. The City of California City Public Works Department shall evaluate final facility siting design prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the on-site construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the City of California City Community Development Department.

Level of Significance after Mitigation

Kern County

Impacts would be less than significant with incorporation of Mitigation Measure MM 4.7-1KC.

City of California City

Impacts would be less than significant with incorporation of Mitigation Measure MM 4.7-1CC.

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.

Solar Facility

Seismically induced liquefaction occurs when loose, water-saturated sediments of relatively low density are subjected to cyclic shaking that causes soils to lose strength or stiffness due to increased pore water pressure. Liquefaction generally occurs when the depth to groundwater is less than 50 feet. Groundwater in the site vicinity is expected to be approximately 133 feet below the ground surface (Stantec 2019a). Thus, the potential for liquefaction at the surface is low. Furthermore, the project is not located within a current, mapped California Liquefaction Hazard Zone (Stantec 2019a). Structures constructed as part of the project would be required by State law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Building code requirements may include, but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. Adherence to applicable regulations would avoid any potential impacts to structures resulting from liquefaction. Impacts would be less than significant.

Mitigation Measures**Kern County**

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance**Kern County**

Impacts would be less than significant.

City of California City

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.

Solar Facility

The project site is relatively flat, with a topographic gradient less than 2 percent. Permanent slopes steeper than 5:1 (horizontal to vertical) or higher than 5 feet are not anticipated to be constructed or built upon with installation of the solar facility. Due to the existing topography and the proposed grading, the potential for landslides on the project site is considered low. Adverse effects related to landslides are not anticipated to occur or pose a hazard to the solar facility or the surrounding area. Impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance after Mitigation

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.

Solar Facility

Site preparation activities for construction of the proposed project would include some minor grading activities that would disturb surface soils. During rainfall events, and particularly during construction activities when surface soils are exposed, there is the potential for significant surface erosion and off-site sediment transportation. Trenching would be required for the installation of underground cables and circuits. Similar ground disturbance may also occur during project decommissioning with removal of the project components from the site. Project construction and/or decommissioning would therefore have the potential to result in erosion, sedimentation, and discharge of construction debris from the site. Additionally, clearing of vegetation and grading activities, for example, could lead to exposed or stockpiled soils susceptible to peak stormwater runoff flows and wind forces.

As described in Section 4.10, *Hydrology and Water Quality*, Mitigation Measures MM 4.10-1KC and MM 4.10-1CC would require preparation of a SWPPP for the project per Kern County National Pollutant Discharge Elimination System (NPDES) requirements that would contain all stormwater runoff on-site.

The SWPPP would include various types of best management practices (BMPs) to prevent erosion and sedimentation from occurring during construction. All temporary erosion control measures required by the Kern County Grading Code (Chapter 17.28.140) and City of California City Grading Code would be included as BMPs in the SWPPP. Per Mitigation Measures MM 4.10-1KC, MM 4.10-1CC, MM 4.10-2KC and MM 4.10-2CC, the project would be required 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) and City of California City Grading Code to the Kern County Public Works Department and City of California City Public Works Department to obtain required grading permits. As described in Section 4.10, *Hydrology and Water Quality*, the project would implement Mitigation Measures MM 4.10-2KC and MM 4.10-2CC to require preparation of a hydrologic study and final drainage plan. Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would ensure that the retention basin and other stormwater management features are consistent with existing regulatory requirements to minimize any erosion or sedimentation resulting from project implementation. Compliance with the Kern County NPDES program, Kern County Grading Code, and City of California City Grading Code would ensure that substantial erosion or the loss of topsoil does not occur. With implementation of Mitigation Measures MM 4.7-1KC, MM 4.7-1CC, MM 4.10-1KC, MM 4.10-1CC, MM 4.10-2KC, and MM 4.10-2CC, impacts would be reduced to less than significant.

During operation, maintenance vehicles and activities would have the potential to disturb topsoil and cause erosion. However, maintenance vehicles would use the proposed project's access roads which would be compacted to provide greater stability, thereby minimizing potential ground disturbance on-site. Furthermore, maintenance activities would be infrequent and would consist primarily of panel washing with water. Runoff water from such activities is expected to infiltrate into the ground surface and not result in substantial erosion or soil loss. Where permanent building improvements would occur, such as the O&M building, ESS units, substation, etc., foundation materials and surface improvements would be impervious, thus eliminating erosion potential in those areas. Therefore, project operation would have a less than significant impact associated with soil erosion and topsoil loss.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.7-1KC and MM 4.10-1KC to MM 4.10-2KC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

City of California City

Implement Mitigation Measures MM 4.7-1CC and MM 4.10-1CC to MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.7-1KC and MM 4.10-1KC to MM 4.10-2KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.7-1CC and MM 4.10-1CC to MM 4.10-2CC, 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-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Solar Facility

The project lies in a relatively flat-lying plain where landslides, lateral spreading, subsidence, liquefaction, and collapse are not expected to occur. Due to such conditions, adverse effects related to landslides are not anticipated to occur or to pose a hazard to the proposed solar facility or surrounding area. Impacts would be less than significant in this regard.

Groundwater in the site vicinity is expected to be approximately 133 feet below the ground surface (Stantec 2019a). Thus, the potential for liquefaction at the surface is low and is not anticipated to result in a substantial risk. As stated above, a final geotechnical study would be performed for the project site as part of Mitigation Measures MM 4.7-1KC and MM 4.7-1CC, which would confirm the findings of the conceptual geotechnical study regarding soil conditions and their ability to support the proposed improvements over the long term. The study would include recommendations to address any unstable soils including the potential for lateral spreading, seismic settlement, and collapse. Therefore, seismic settlement, lateral spreading, and/or collapse are not expected to result in significant impacts. Furthermore, the proposed structures would be subject to applicable ordinances of the Kern County Building Code (Chapter 17.08), California City Building Code, and all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Therefore, impacts would be reduced to less than significant with implementation of Mitigation Measures MM 4.71-KC and MM 4.7-1CC.

Mitigation Measures**Kern County**

Implement Mitigation Measure MM 4.7-1KC.

City of California City

Implement Mitigation Measure MM 4.7-1CC.

Level of Significance after Mitigation**Kern County**

With implementation of Mitigation Measure MM 4.7-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.7-1CC, 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 direct or indirect risks to life or property.

Solar Facility

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 adjacent to such soils.

The near-surface soils encountered during the recent geotechnical investigation are mostly sandy soils whose expansion potential is considered low (Stantec 2019a). A final geotechnical study would be performed for the project site as part of Mitigation Measures MM 4.7-1KC and MM 4.7-1CC, which would confirm the findings of the conceptual geotechnical study regarding soil conditions and their ability to support the proposed improvements over the long term. The study would include recommendations to address any unstable soils including the potential for expansive soils and their potential to create risks to life or property. Furthermore, implementation of Kern County Building Code and City of California City Building Code requirements, as applicable, would further minimize the potential impact of expansive soils. Therefore, impacts related to expansive soils would be reduced to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.7-1KC.

City of California City

Implement Mitigation Measure MM 4.7-1CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.7-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.7-1CC, 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.

Solar Facility

As described in Chapter 3, *Project Description* of this EIR, the project includes development of a septic system and leach field for the O&M facility. The septic system and leach field would be constructed to

comply with applicable requirements of the Kern County Environmental Health Services Division. As such, the proposed septic system and leach field are 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 impact from flooding. However, if not properly designed, or if soils are not capable of adequately accommodating the volume of wastewater generated, septic systems can result in health impacts, adversely affect natural habitat, and/or pollute underlying groundwater. Therefore, impacts related to construction of a septic system are considered potentially significant and mitigation is required.

The septic system and leach field would be constructed to comply with applicable requirements of the Kern County Environmental Health Services Division. The Environmental Health Services Division's "Standards for Land Development" include the aspects of sewage and preservation of environmental health as well as measures to demonstrate the adequate drainage of wastewater prior to project approval. The standards are intended to safeguard public health and are enforced by the County's Environmental Health Division. Prior to construction of the septic system and leach field, percolation testing would be required for the proposed location of the septic system and leach field to ensure that percolation of water can meet minimum standards set by the County. Mitigation Measures MM 4.7-2KC and MM 4.7-2CC 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 Mitigation Measures MM 4.7-2KC and MM 4.7-2CC would reduce impacts to less than significant.

Mitigation Measures

Kern County

MM 4.7-2KC: Prior to the issuance of any building permit for the operation 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(s) and leach field(s).

City of California City

MM 4.7-2CC: Prior to the issuance of any building permit for the operation and maintenance facility, the project operator shall obtain all required permits and approvals from the City of California City, and shall implement all required conditions regarding the design and siting of the septic system(s) and leach field(s).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.7-2KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.7-2CC, 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, as defined in CEQA Guidelines Section 15064.

Solar Facility

Geologic mapping indicates that the project area is primarily underlain by Holocene-age younger alluvium (Qa) with a small amount of Pleistocene-age older alluvium (Qoa) within the southeastern portion of the project area. Additionally, Pleistocene-age older alluvium (Qoa) often occurs at depth beneath Holocene-age younger alluvium or occurs as a mixture of undifferentiated alluvium with these younger deposits within the Mojave Desert Geomorphic Province (see Appendix G-1).

Based on the PFYC system, Pleistocene-age older alluvium (Qoa) has a moderate paleontological potential (PFYC 3). Holocene-age younger alluvium (Qa) is estimated to be less than 11,000 years old and has a low paleontological potential (PFYC 2), because these deposits are too young to contain in-situ fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential, which may be impacted at depth.

Excavations within the project area that impact Pleistocene-age older alluvium (Qoa), either at the surface or at depth beneath Holocene-age younger alluvium (Qa), has the potential to result in an adverse direct impact on scientifically important paleontological resources. Surface grading or shallow excavations entirely within Holocene-age younger alluvium (Qa) in the project area are unlikely to uncover significant fossil vertebrate remains, since any recovered resources will lack stratigraphic context. However, these deposits may shallowly overlie older in-situ sedimentary deposits. Therefore, grading and other earthmoving activities may potentially result in significant adverse direct impacts to paleontological resources throughout the entirety of the project area. However, with implementation of Mitigation Measures MM 4.7-3KC through MM 4.7-6KC, and MM 4.7-3CC through MM 4.7-6CC, which would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of accidentally uncovered paleontological resources, impacts to paleontological resources would be reduced to less than significant.

Mitigation Measures

Kern County

MM 4.7-3KC: Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist shall be retained to prepare and implement a Paleontological Resources Mitigation Plan for the project. A Qualified Paleontologist is an individual who meets the education and professional experience standards as set forth by the Society of Vertebrate Paleontology (2010), which recommends the paleontologist shall have at least a master's degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. The Paleontological Resources Mitigation Plan shall describe mitigation recommendations in detail, including paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements.

MM 4.7-4KC: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (2010), to carry out all mitigation measures related to paleontological resources.

- a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall 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 other awareness training requirements.
- c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.
- d. The Paleontological Resources Awareness Training Guides shall be kept onsite and available for all personnel to review and be familiar with as necessary.

MM 4.7-5KC: A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one-foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall be suspended until an excavation depth of five feet below the ground surface is reached in the area.

- 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.
 1. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should 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 the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and 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 4.7-6KC: 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.

City of California City

MM 4.7-3CC: Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist shall be retained to prepare and implement a Paleontological Resources Mitigation Plan for the project. A Qualified Paleontologist is an individual who meets the education and professional experience standards as set forth by the Society of Vertebrate Paleontology (2010), which recommends the paleontologist shall have at least a master's degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. The Paleontological Resources Mitigation Plan shall describe mitigation recommendations in detail, including paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements.

MM 4.7-4CC: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (2010), to carry out all mitigation measures related to paleontological resources.

- a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall 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 City of California City Community Development Department. The training guide may be presented in video form.

- b. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements.
- c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.
- d. The Paleontological Resources Awareness Training Guides shall be kept onsite and available for all personnel to review and be familiar with as necessary.

MM 4.7-5CC: A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one-foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall be suspended until an excavation depth of five feet below the ground surface is reached in the area.

- a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the City of California City Community Development Department and shall be based on a review of geologic maps and grading plans.
 - 1. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the City of California City Community Development 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 the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and 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 City of California City Community Development Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.

MM 4.7-6CC: 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

Kern County

With implementation of Mitigation Measures MM 4.7-3KC through MM 4.7-6KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.7-4CC through MM 4.7-6CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Solar Facility

Project impacts would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. Cumulative projects listed in Table 3-3, *Cumulative Projects List*, of Chapter 3, *Project Description*, of this EIR would also be subject to similar seismic hazards and potential geologic instability. However, the effects of these projects are not of a nature to cause cumulatively significant effects relative to geology or 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. None of the cumulative projects would be located on or adjacent to the project site, with exception of the Eland 1 Solar project, which lies adjacent to the subject property.

Compliance with the Kern County Building Code, California City Building Code, CBC, and IBC, in combination with implementation of Mitigation Measures MM 4.7-1KC and MM 4.7-1CC which requires implementation of recommendations from the Geotechnical Engineering Report prepared for the project, would ensure site stability to the maximum extent possible during construction and operation. Therefore, project impacts related to seismic hazards, ground shaking, and geologic instability would not be cumulatively considerable. Impacts would be less than significant with mitigation incorporated.

Development of the project, with conformance to regulatory requirements discussed above, would result in less than significant impacts related to the exposure of persons or structures to adverse geologic conditions or seismic hazards. Although the entire region is a seismically active area, geologic and soil conditions vary widely within a short distance, making the cumulative context for potential impacts resulting from exposure of 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 Kern County Building Code and/or other applicable local building codes (if located in an incorporated city) which would reduce the risk to people and property to less than significant levels. While future seismic events cannot be predicted, adherence to all federal, State, and local programs, requirements and policies pertaining to building safety and construction would limit the potential for injury or damage to occur. Further, implementation of

Mitigation Measures MM 4.7-1KC and MM 4.7-1CC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation. Therefore, the project, combined with past, present, and other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards and/or seismic conditions. The project would result in less than significant cumulative impacts related to geology and soils.

However, 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 would be required to comply with applicable codes, standards, and permitting to mitigate erosion impacts. Development of the project site has the potential to contribute to soil erosion and loss of topsoil during construction. Potential impacts would be mitigated through the implementation of a SWPPP and appropriate BMPs. In addition, dust suppression measures are included as part of the air quality mitigation measures in Section 4.3, *Air Quality*, of this EIR to reduce airborne pollutants and, consequently, the loss of topsoil. Impacts associated with erosion are mitigated on a project-by project basis, which would reduce the overall cumulative impact to a less than significant level.

Although construction activities have the potential to result in erosion on the project site, implementation of Mitigation Measures MM 4.7-1KC, MM 4.7-1CC, MM 4.10-1KC, and MM 4.10-1CC would significantly reduce such effects. Other cumulative projects would be required to adhere to similar requirements, thereby minimizing cumulative erosion impacts. Specifically, all planned projects in the project vicinity would be subject to environmental review and would be required to conform to the Kern County General Plan and Building Code and/or local building code (if located in an incorporated city), and would implement additional mitigation measures, as appropriate, to ensure soil stability, including those related to seismically induced erosion. Furthermore, the proposed project would implement Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, as described in Section 4.10, *Hydrology and Water Quality*, of this EIR, which would require preparation of a hydrologic study and final drainage plan. Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would ensure that the retention basin and other stormwater management features are consistent with existing regulatory requirements to minimize the potential for erosion or sedimentation resulting from project implementation. With implementation of Mitigation Measures MM 4.7-1KC and MM 4.10-2KC, and MM 4.7-1CC and MM 4.10-2CC, the project would not contribute to a significant cumulative impact relative to geologic or seismic hazards or related events. Moreover, implementation of Mitigation Measures MM 4.7-1KC and MM 4.10-2KC and MM 4.7-1CC and MM 4.10-2CC, would ensure that the project does not result in soil erosion or substantial topsoil loss during project construction activities and operations. As a result, with implementation of mitigation, the project's contribution to cumulative impacts related to erosion and siltation would be reduced to less than significant.

The geographic scope for cumulative effects to paleontological resources is Fremont Valley, which includes the western edge of the Mojave Desert where the proposed project is located. 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 Fremont Valley 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. Implementation of Mitigation Measures MM 4.7-3KC through MM 4.7-6KC and MM 4.7-3CC through MM 4.7-6CC would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of accidentally uncovered paleontological resources.

With implementation of Mitigation Measures MM 4.7-3KC through MM 4.7-6KC and MM 4.7-3CC through MM 4.7-6CC, as described above, 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 Fremont Valley, cumulative impacts to paleontological resources would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.7-1KC, MM 4.7-3KC through MM 4.7-6KC, MM 4.10-1 KC, and MM 4.10-2KC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

City of California City

Implement Mitigation Measures MM 4.7-1CC, MM 4.7-4CC through MM 4.7-6CC, MM 4.10-1CC, and MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.7-1KC, MM 4.7-3KC through MM 4.7-6KC, MM 4.10-1CC, and MM 4.10-2KC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text), cumulative impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.7-1CC, MM 4.7-3CC through MM 4.7-6CC, MM 4.10-1CC and MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text), cumulative impacts would be less than significant.

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4.8.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the proposed project. It also describes the impacts associated with GHGs that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable.

Information in this section is based primarily on the *Air Quality and Greenhouse Gas Assessment* prepared by Stantec (Stantec 2021a), located in Appendix C-1 of this EIR. The impact assessment for the project is also based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines by the California Air Resources Board (CARB), the United States Environmental Protection Agency (USEPA), and the applicable provisions of the California Environmental Quality Act (CEQA).

4.8.2 Environmental Setting

As described in Chapter 3, *Project Description*, of this EIR, the project would include the development of a photovoltaic solar facility and associated infrastructure necessary to generate up to 500 megawatts (MW) of renewable energy, and 600 MW hours (MWh) of storage capacity on approximately 1,955 acres of privately owned land.

GHGs and climate change are a cumulative global issue. CARB and USEPA regulate GHG emissions within the State of California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emissions reduction. The project site is located in the Kern County portion under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD) and is located in the Mojave Desert Air Basin (MDAB).

Greenhouse Gases

Constituent gases that trap heat in the earth's atmosphere are called GHGs, analogous to the way a greenhouse retains heat. GHGs play a critical role in the earth's radiation budget by trapping infrared radiation emitted from the earth's surface that would otherwise have escaped into space. Prominent GHGs contributing to this process include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and chlorofluorocarbons (CFCs).

Without the natural heat-trapping effect of GHG, a phenomenon known as the "greenhouse effect," the earth's surface would be about 34 degrees Fahrenheit (°F) cooler. However, anthropogenic (human-caused) emissions of GHGs in excess of natural ambient concentrations have led to unnatural changes to the earth's climate, collectively known as global warming or climate change, or, more accurately, global climate disruption. Emissions of these gases that induce global climate disruption are attributable to human

activities associated with industrial and manufacturing, utilities, transportation, residential, and agricultural sectors.

The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG compounds have varying GWP and atmospheric lifetimes. The reference gas for the GWP is CO₂, which possesses a GWP of 1. The calculation of the CO₂ equivalent (CO₂e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. Methane's warming potential of 28 indicates that methane has a 28 times greater warming affect than CO₂ on a molecular basis. The larger the GWP, the more that a given gas warms the earth compared to CO₂ over that time period. The time period usually used for GWPs is 100 years. GWPs for the three GHGs produced by the project are as follows:

- Carbon dioxide (CO₂) – GWP 1
- Methane (CH₄) – GWP 28
- Nitrous Oxide (N₂O) – GWP 265

A CO₂e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called tonnes (i.e., metric tons) of CO₂e (MTCO₂e). The principal GHGs are CO₂, CH₄, N₂O, sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), which are described below (USEPA 2021a).

Carbon Dioxide (CO₂)

CO₂ is a colorless, odorless gas consisting of molecules made up of two oxygen atoms and one carbon atom. CO₂ is produced when an organic carbon compound (such as wood) or fossilized organic matter, (such as coal, oil, or natural gas) is burned in the presence of oxygen. CO₂ is removed from the atmosphere by CO₂ "sinks", such as seawater, ocean-dwelling plankton, forests, and grasslands. Under certain circumstances, however, these sinks can also be a source of CO₂. Whereas the biosphere and ocean achieve a natural balance of CO₂ production and absorption, humankind has altered the natural carbon cycle since the industrial revolution. Beginning in the mid- 1700s, the burning of coal, oil, natural gas, and wood has increased globally.

Methane (CH₄)

CH₄ is a colorless, odorless, combustible, non-toxic gas consisting of molecules made up of four hydrogen atoms and one carbon atom. CH₄ is the main constituent of natural gas, a fossil fuel. CH₄ is released when organic matter decomposes in low oxygen environments. Natural sources include decomposition processes generated by wetlands, swamps and marshes, termites, and oceans. Human sources include the mining of fossil fuels and transportation of natural gas, digestive processes in ruminant animals such as cattle, rice paddies, and buried waste in landfills. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH₄. Other anthropogenic sources include fossil fuel combustion and biomass burning.

Nitrous Oxide (N₂O)

N₂O is a colorless, non-flammable gas with a sweetish odor, commonly known as "laughing gas", and sometimes used as an anesthetic. N₂O is naturally produced in the oceans and in rainforests. Man-made

sources of N₂O include agricultural fertilizers, nylon and nitric acid production, cars with catalytic converters, and the burning of organic matter. Concentrations of N₂O also began to rise at the beginning of the industrial revolution.

Chlorofluorocarbons (CFCs)

CFCs are gases formed synthetically by replacing all hydrogen atoms in CH₄ or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. In the 1970s, scientists discovered that CFCs destroy stratospheric ozone, leading to thinning of the earth's protective ozone layer. Since then there has been an ongoing global effort to halt their production, which has been extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFCs)

Hydrofluorocarbons (HFCs) are synthesized chemicals that are used as a substitute for CFCs. Out of all of the GHGs, HFCs are one of three groups with the highest GWP. HFCs are synthesized for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs)

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays are able to destroy the compounds only in the upper atmosphere. Consequently, PFCs have very long lifetimes – between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride (SF₆)

Sulfur hexafluoride (SF₆) is a man-made and extremely potent GHG. SF₆ is very persistent, with an atmospheric lifetime of more than a thousand years. Thus, a relatively small amount of SF₆ can have a significant long-term impact on global climate. SF₆ is used primarily by the electric power industry. Because of its inertness and dielectric properties, it is the industry's preferred gas for electrical insulation, current interruption, and arc quenching (to prevent fires) in the transmission and distribution of electricity. SF₆ is used extensively in high-voltage circuit breakers and switchgear, and in the magnesium metal casting industry.

Greenhouse Gas Emission Levels

California

According to the USEPA, in 2018, total GHG emissions in the U.S. from the land sector were estimated to be approximately 6,677 million metric tons of CO₂e (MMTCO₂e) (USEPA 2021a). According to CARB, California produced 425 MMTCO₂e in 2018 (CARB 2021b). California has a larger percentage of its total GHG emissions coming from the transportation sector (40 percent) than the U.S. emissions (29 percent) and a smaller percentage of its total GHG emissions from the electricity generation sector (i.e., 15 percent

in California vs. 27 percent for the U.S. as a whole). In 2016, statewide GHG emissions dropped below the 2020 GHG limit required by the California Global Warming Solutions Act (Assembly Bill [AB] 32), discussed in further detail below. California's GHG emissions have remained below the 2020 GHG limit since 2016.

California GHG emissions by economic sector from 2009 to 2017 are summarized below in Table 4.8-1, California Greenhouse Gas Emissions (Million Metric Tons CO₂e), including the percentages by sector for 2017.

Table 4.8-1. California Greenhouse Gas Emissions (Million Metric Tons CO₂e)

Emission Inventory Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	% of 2017 tonnage
Transportation	170.20	165.13	161.76	161.31	160.91	162.53	166.18	168.76	169.86	40.05%
Electricity Generation (In State)	53.33	46.75	41.10	51.02	49.42	51.68	49.88	42.28	38.45	9.07%
Electricity Generation (Imports)	48.04	43.59	46.87	44.50	39.98	36.79	33.93	26.32	23.94	5.65%
Commercial	12.89	13.58	13.71	13.41	13.30	12.52	12.67	13.14	13.02	3.4%
Industrial	87.90	91.50	90.17	91.08	93.69	94.02	91.48	89.49	89.40	21.08%
Residential	29.32	30.06	30.51	28.21	29.02	23.75	24.17	25.27	26.00	6.30%
Agriculture	32.85	33.68	34.34	35.46	33.99	35.06	33.75	33.51	32.42	7.64%
High Global Warming Potential	12.29	13.52	14.53	15.51	16.75	17.73	18.60	19.26	19.99	4.71%
Recycling and Waste	8.27	8.37	8.47	8.49	8.52	8.59	8.73	8.81	8.89	2.10%
Total Gross Emissions	457.3	448.5	443.6	451.2	447.7	444.7	441.4	429.0	424.1	100%

Source: CARB 2019.

Kern County

In 2012, the San Joaquin Valley Air Pollution Control District prepared a Communitywide GHG Inventory for Kern County (SJVAPCD 2012). Using the 2005 baseline GHG emissions, the 2020 emissions inventory was forecasted to be 27.3 MTCO₂e, of which the electricity consumption sector represents 31 percent, followed by the fossil fuel sector at 26 percent. Table 4.8-2, *Projected 2020 Kern County GHG Emissions*, presents the County's projected 2020 GHG emissions, minus sequestration.

Table 4.8-2. Projected 2020 Kern County GHG Emissions

Sector	MTCO _{2e}	Percent of Total
Electricity Consumption	8,572,261	31%
Residential/Commercial/Industrial Combustion	1,689,414	6%
Transportation	4,823,756	18%
Fossil Fuels Industry	7,002,009	26%
Industrial Processes	2,348,754	9%
Waste Management	146,788	1%
Agriculture Fugitives	2,652,616	10%
Forestry and Land Use	14,669	<1%
Other Sources	22,442	<1%
Total	27,272,709	
Source: SJVAPCD 2012		
Notes: MTCO _{2e} = metric tons carbon dioxide equivalent		

Potential Environmental Effects

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air, land, and water temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89 degrees Celsius (°C) (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperatures (LSAT) obtained from station observations are in agreement that LSATs, as well as sea surface temperatures, have increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014).

According to the California Environmental Protection Agency's (CalEPA) 2010 *Climate Action Team Biennial Report*, potential impacts of climate change in California may include decreased snowpack, sea level rise, and increase in extreme heat days per year, high ground-level ozone days, large forest fires, and drought (CalEPA 2010). Below is a summary of some of the potential impacts that could be experienced in California because of climate change.

Air Quality

Higher temperatures, which are conducive to air pollution formation, could worsen air quality in many areas of California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality.

However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varied hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose 8 inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice in the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources 2008; California Climate Change Center 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not understood well. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based upon historical data and modeling, the California Department of Water Resources projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historical average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (California Department of Water Resources 2008).

Hydrology and Sea Level Rise

As discussed above, climate change could potentially affect the amount of snowfall, rainfall, and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. According to *The Impacts of Sea-Level Rise on the California Coast* prepared by the California Climate Change Center (2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 millimeters per year, which is double the observed twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880. Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The IPCC has predicted a mean sea level rise of 11–38 inches by 2100 (IPCC 2014). This prediction is more than 50 percent higher than earlier projections of 7 to 23 inches, when compared to the same emissions scenarios and periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to saltwater intrusion. In addition, increased CO₂ emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has a \$30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality.

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects at the local and global levels. Increasing concentrations of GHGs are likely to accelerate the rate and severity of climate change impacts. Scientists project that the average global surface temperature could rise by 1.0–4.5°F in the next 50 years, and 2.2–10°F during the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage.

4.8.3 Regulatory Setting

Federal

Environmental Protection Agency

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that establishes the GHG permitting thresholds that determine when federal Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court in *Utility Air Regulatory Group v. EPA* (134 S. Ct. 2427 [2014]) held that the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Federal Clean Air Act

The USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United

States. These programs focus on energy efficiency, renewable energy, methane and other non-CO₂ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). The Endangerment Finding was required before the USEPA could regulate GHG emissions under Section 202(a)(1) of the Clean Air Act. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

On May 19, 2009, the federal government announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard jointly approved by the USEPA and the National Highway Traffic Safety Administration (NHTSA) applies to passenger cars and light-duty trucks for model years 2012–2016. The rule surpasses the prior Corporate Average Fuel Economy (CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO₂ per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model years 2017–2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022–2025 (USEPA 2018). In March 2020, the USEPA and NHTSA adopted the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that would maintain the CAFE and CO₂ standards applicable in model year 2020 for model years 2021–2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012.

Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 Federal Register 57106–57513). The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (USEPA and NHTSA 2011). In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model years 2018–2027 for certain trailers,

and model years 2021–2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and NHTSA 2016).

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule

This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MTCO₂e emissions per year (USEPA 2011). Additionally, reporting of emissions is required for owners of SF₆- and PFC-insulated equipment, when the total nameplate capacity of these insulating gases is above 17,280 pounds. The project would not be expected to trigger GHG reporting according to this 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 USEPA mandated to apply PSD requirements to facilities whose stationary source CO₂e emissions exceed 75,000 tons per year (USEPA 2010). The project would not be expected to trigger PSD permitting as required by this regulation; however, GHG emissions of the project are quantified in this EIR.

Fuel Efficiency Standards for Construction Equipment

The federal government sets fuel efficiency standards for non-road diesel engines that are used in construction equipment. The regulations, contained in 40 CFR Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, the USEPA adopted a comprehensive national program to reduce emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain the greatest reductions. To meet these Tier 4 emission standards, engine manufacturers will produce new engines with advanced control technologies (USEPA 2004).

State

Executive Order S-1-07

Executive Order (EO) S-1-07 recognizes that the main source of GHG emissions in California is from the transportation sector, and establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of EO 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 MMTCO₂e 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.

Senate Bill 97

SB 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Natural Resources Agency adopted

amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Executive Order S-3-05

On June 1, 2005, the California Governor issued EO S-3-05, which set the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels;
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the 2006 CAT Report). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies to ensure the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light-duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, and so on. In April 2015, the governor issued EO B-30-15, calling for a new target of 40 percent below 1990 levels by 2030 (see below).

Assembly Bill 1493

AB 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, the USEPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years 2017–2025. The Advanced Clean Cars program coordinates the goals of LEVs, zero emissions vehicles (ZEV), and Clean Fuels Outlet programs, and would provide major reductions in GHG emissions. By 2025, when the rules will be implemented fully, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

Assembly Bill 32 and the California Climate Change Scoping Plan

AB 32 outlines California's major initiative for reducing GHG emissions; called the "California Global Warming Solutions Act of 2006," AB 32 was signed into law in 2006 and codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020, and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMTCO₂e. CARB approved the Scoping Plan on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures.

Many of the GHG reduction measures included in the Scoping Plan have been adopted (e.g., LCFS, Advanced Clean Car standards, and Cap-and-Trade) since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 statewide goals. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the state's longer-term GHG reduction strategies with other state policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use. CARB approved 431 MMTCO₂e as the 2020 emission limit with the approval of the First Update to the Scoping Plan on May 22, 2014 (CARB 2014).

The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32, discussed below, and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the LCFS, and reduction of methane emissions from agricultural and other wastes (CARB 2017).

Renewables Portfolio Standard

In 2002, a state law established the basic policy framework for the increased use of renewable energy resources in California, known as the Renewables Portfolio Standard (RPS). Specific requirements were established for investor-owned utilities, including a 20 percent target and provisions for the types of renewable resources that could be used to meet the target. The major eligible renewable energy resources, as defined by the California Energy Commission (CEC), include biomass, geothermal, solar, wind, and small hydroelectric facilities. Under the law, publicly owned utilities (POUs) were directed to pursue voluntary actions to increase the use of renewable energy in their portfolios, but were allowed the flexibility to define their targets and the types of resources that could meet those targets. The CEC and the California Public Utilities Commission (CPUC) work collaboratively to implement the RPS.

In 2006, new state policy heightened the need to increase the use of renewable energy as part of the state's GHG reduction efforts. In April 2011, Governor Brown signed SB X1-2 that revised the RPS target to be 33 percent renewables by 2020. The new RPS standards apply to all electricity retailers in the state, including POUs, investor-owned utilities, electricity service providers, and community choice aggregators. In October 2015, Governor Brown signed SB 350, which expands and increases the target of the RPS program to 50 percent by the end of 2030. SBs X1-2 and 350 included new enforcement provisions and direct CARB to collect financial penalties for any notice of violation issued by the CEC to a POU for its failure to comply with requirements of the state's RPS program.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's RPS. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. This further supports the reduction of GHG emissions from the electricity sector.

Executive Order B-55-18

On September 10, 2018, the California governor issued EO B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

Senate Bill 375

SB 375 passed the Senate on August 30, 2008, and was signed by the governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions and contributes more than 40 percent of the GHG emissions in California, with automobiles and light trucks alone contributing almost 30 percent. SB 375 indicates that GHGs from automobiles and light trucks can be reduced by new vehicle technology. However, significant reductions from changed land use patterns and improved transportation are also necessary. SB 375 states, “Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32.” SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the state to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons (MT) CO₂e by 2030 and 2 MTCO₂e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (regional, sub-regional, county, or city level), but not for specific individual projects because they include all emissions sectors in the state.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery, in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Executive Order B-30-15

On April 29, 2015, the governor issued EO B-30-15, which added an interim target of GHG emissions reductions to help ensure that the State meets its 80 percent reduction by 2050 as set in EO S-3-05. The interim target is reducing GHG emissions by 40 percent by 2030. It also directs State agencies to update the Scoping Plan, update the Adaptation Strategy every three years, and take climate change into account in their planning and investment strategies. Additionally, it requires that the State's Five-Year Infrastructure Plan will take current and future climate change impacts into account in all infrastructure projects.

California Green Building Standard Code

The State of California adopted the 2010 CALGreen Code, which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new nonresidential buildings of any size that are not additions to existing buildings.

The California Building Standards Commission adopted the 2013 California Building Standards Code, which included the 2013 CALGreen Code, which became effective on January 1, 2014. The mandatory provisions of the code are anticipated to reduce GHG emissions by 3 MMTCO_{2e} by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. Additionally, the California Building Code includes a requirement for a 20 percent reduction in indoor potable water usage. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014. The 2016 CALGreen Code became effective on January 1, 2017. The updated code addresses clean air vehicles and requirements for electric vehicle charging infrastructure. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2020.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combined the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2017). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, has adopted new GHG standards for model years 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in model years 2018–2025.

California Air Pollution Control Officers Association White Paper

The California Air Pollution Control Officers Association (CAPCOA) issued a white paper (*CEQA and Climate Change*) on evaluating GHG emissions under CEQA (CAPCOA 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 Council of Governments (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. Kern COG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, Kern COG has prepared the 2018 Regional Comprehensive Plan (RCP) 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 a sustainable communities strategy (SCS) component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008 (see Senate Bill 375, above). The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5 percent per capita reduction and the 2035 target is a 10 percent per capita reduction from the 2005 base year.

The SCS strives to reduce air emissions from passenger vehicle and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns and, if feasible, help meet CARB GHG targets for the region. As explained in the Kern COG 2018 RTP EIR, the key purpose of SB 375 and the Kern COG SCS is to reduce per capita emissions originating from passenger vehicles and light-duty trucks. Accordingly, the 2018 RTP:

- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions;
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region;
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption);
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region; and
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG 2018).

Local

Kern County General Plan

The Land Use, Open Space, and Conservation Element and Energy 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. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

Chapter 1. Land Use, Open Space and Conservation Element

Air Quality

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 (CEQA), the appropriate decision making body, as part of its deliberations, will ensure that:
- a) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - b) 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 CEQA.

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 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 EPA certified, low emission natural gas fireplaces.
- g) Provide bicycle lockers and shower facilities onsite.
- h) Increase the amount of landscaping beyond what is required in the Zoning Ordinance (Ch. 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.

Chapter 5. Energy Element

Solar Energy Development

Goal

Encourage safe and orderly commercial solar development.

Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuel and improve air quality.
- Policy 2: 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 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 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.

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 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 Climate Change Action Plan would ensure the goal of AB 32 can be attained with the project.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

California City General Plan

Chapter 5. Open Space and Conservation Element

The following are provisions of this General Plan element that involve strategies to promote energy conservation and improve air quality, which would have co-benefits of reducing GHG emissions.

5.15 Conservation Goals, Policies, and Implementation Measures

Goals

Goal: Encourage conservation of energy resources.

Policies

Policy 1: Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Policy 2: Promote energy conservation measures contained in Title 24 of the California Code of Regulations.

Implementation Measure

Measure C-5: The City shall participate with the California Air Resources Board (CARB) and/or the Kern County Air Pollution Control District (APCD) on programs to reduce mobile and stationary source emissions.

Eastern Kern Air Pollution Control District (EKAPCD)

In 2012, the EKAPCD adopted an addendum to its CEQA Guidelines to address GHG impacts, including quantitative thresholds for determining significance of GHG emissions for new stationary sources where the EKAPCD serves as the CEQA lead agency. A project is considered to have a significant project or cumulatively considerable impact if it exceeds the following criteria:

- Generate 25,000 metric tons or more of CO₂e per year

The above impact would be considered to be fully reduced to below the significance level if it meets one of the following conditions:

- The project demonstrates to the EKAPCD that it is in compliance with a state GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than the state plan; or
- Project GHG emissions can be reduced by at least 20 percent below business as usual through implementation of one or more of the following strategies:
 - a) Compliance with Best Performance Standard (BPS);
 - b) Compliance with GHG Offset; and/or
 - c) Compliance with an Alternative GHG Reduction Strategy.

4.8.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to GHGs have been evaluated using a variety of resources including the *Air Quality and Greenhouse Gas Assessment* prepared for the project (Appendix C-1 of this EIR) and relevant literature such as information and guidelines by CARB, USEPA, and the applicable provisions of CEQA.

The project emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. The model quantifies direct emissions from construction and operations (including vehicle use), and indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Refer to the *Air Quality and Greenhouse Gas Assessment* located in Appendix C-1 of this EIR for a detailed discussion of the CalEEMod modeling parameter assumptions.

Construction and Decommissioning

Construction and decommissioning of the solar project would generate temporary GHG emissions primarily from the use of on-site construction equipment, vehicles transporting construction workers to and from the project site, and heavy-duty trucks used to export earth materials off-site. Site preparation and grading typically generate the greatest amount of emissions from grading equipment and soil hauling. Emissions associated with decommissioning the project were conservatively assumed to be equivalent to construction of the project, given the type of equipment required for decommissioning.

Based on information provided by the project proponent, construction assumptions for the project have been quantified using conservative assumptions of a reasonably worst-case scenario. Construction emissions were quantified using the CalEEMod version 2016.3.2.

Approximately 12 to 18 months of construction is anticipated for the proposed project. As a conservative analysis, it was assumed that construction would be completed in 12 months. See Appendix C-1 for a complete list of construction assumptions, including equipment and vehicles. Details regarding the methods and activity assumptions by source type are provided below.

- **Off-Road Equipment:** Construction emissions can vary substantially from day to day depending on the level of activity, the type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust

emissions from the activity levels of heavy-duty construction equipment and motor vehicle operation. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles and worker traffic. This analysis provided the total peak emissions that would occur if all pieces of equipment were used on the same day. This is a conservative estimate and, therefore, represents a worst-case scenario. It is not likely that all equipment would be working at the same time, and, therefore, emissions would be lower than this worst-case scenario.

- **On-Road Vehicles and Trucks:** On-road mobile sources consist of employee and vendor vehicle trips. The number of vehicle trips that would be produced during construction were based on the *Traffic Impact Analysis* (Appendix K-1 of this EIR) prepared for the project. The number of vehicle trips varies by month depending on which construction phases are active, which affects the number of employees and materials delivery. The daily trips were summarized by phase and multiplied by the total number of workdays to obtain the total haul trips. Of the total heavy vehicle trips, 70 percent were assumed to be for hauling and 30 percent for vendors.

The project has a tentative life of 30 to 40 years, at which time the operations may be renewed and on-site technology updated, or, alternatively, the project may 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 is anticipated that the emissions from decommissioning activities would be less than 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.

Operations

Long-term operational emissions associated with the proposed project were also quantified using CalEEMod. Long-term emissions result from operational mobile sources from new employees and water use resulting from cleaning of the solar panels. All assumptions and calculations are provided in Appendix C-1.

- **Vehicle Emissions:** Once placed into service, the project would be operated by up to 20 permanent employees. However, it is possible that the project would share personnel with nearby solar facilities, thus reducing the project's on-site operational staff. To provide a conservative estimate, off-site emissions were based on the maximum number of employees that would be traveling to the site in a single day to perform maintenance activities if the project required its own personnel (i.e., 20 total employees).
- **Water Use:** The use of water in California can involve substantial energy consumption, depending on the source of the water and the use location relative to the source. Major portions of the state rely on imported water from the State Water Project (California Aqueduct), the Central Valley Project, the Colorado River Aqueduct, the All-American Canal, and similar large-scale water distribution systems. Moving water across the state involves considerable energy consumption for pumping and delivering the water to the use location. The use of groundwater can involve substantial energy consumption to pump water from deep aquifers. In addition to the energy consumption associated with wholesale water supply, energy is consumed during local treatment for potable use and for local delivery. Most of the energy associated with water supply is provided by electricity, which is generated from a variety of sources, including fossil-fueled power plants

that produce GHGs. Consequently, the use of water for solar photovoltaic (PV) panel washing and facilities at the operations and maintenance buildings during operation results in indirect GHG emissions. Based on the energy factors in CPUC's *Embedded Energy in Water Studies* (CPUC 2010) and assuming minimal treatment and delivery, it was estimated that each acre-foot of water requires 650 kilowatt-hours of electricity for project site delivery. The amount of GHG emissions associated with the 650 kilowatt-hours was based on the emissions profile for Pacific Gas & Electric Company provided in CalEEMod.

Displaced Emissions Methodology

Operation of the project would create renewable energy over the planned 30- to 40-year project lifetime. This energy would displace GHG emissions that would otherwise be produced by existing power generation resources, including coal and natural gas/other non-renewables. The project would deliver up to 500 MW of electricity to the point of interconnect at peak sun exposure. Annual energy generation or renewable energy generation in MWh was estimated based on solar radiation at the project site, annual operational time, and maximum capacity of 500 MW. Photovoltaic cell capacity is rated in terms of mega or kilowatts and indicates the amount of instantaneous power produced when operating at peak sun exposure. Total amount of electricity produced is measured in watt-hours and is dependent on operational time. Operational time of a solar panel is defined by the amount of time that the photovoltaic cells are actively converting solar energy into power, which depends on solar radiation. Solar radiation is the measure of energy emitted from the sun and varies daily depending on the time of day, season, local landscape, and geography. Refer to Appendix C-1 of this EIR for detailed calculations related to the project's annual energy generation and associated displacement of emissions. The project is assumed to displace a fraction of existing current annual power generated by dispatchable natural gas-fired combined-cycle power plants. It should be noted that the project includes battery facilities to store electrical energy from additional MW generated during the middle of the day. Discharging the batteries at night would extend the amount of time the project could deliver electricity to the point of interconnect, thereby further increasing the displacement of emissions.

Thresholds of Significance

The *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California.

According to the *CEQA Guidelines*, a project would have significant impacts on GHG emissions if it would:

- a) Generate GHG 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.

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's 2017 Scoping Plan is presumed to have less than significant GHG impacts.

In March 2012, the EKAPCD adopted the Addendum to its CEQA Implementation Document to address GHG impacts, including establishing quantitative thresholds for determining significance of GHG emissions when the EKAPCD is the CEQA lead agency. In these circumstances, a project is considered to have a significant impact or cumulatively considerable impact if it exceeds the following criteria:

- Generate 25,000 metric tons or more of CO₂e per year

The above impact would be considered to be fully reduced to below the significance level if it meets one of the following conditions:

- The project demonstrates to the EKAPCD that it is in compliance with a state GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than the state plan; or
- Project GHG emissions can be reduced by at least 20 percent below business as usual through implementation of one or more of the following strategies:
 - a) Compliance with a Best Performance Standard (BPS) as set forth in Section VI of the Addendum to the EKAPCD CEQA Implementation Document;
 - b) Compliance with GHG Offset as detailed in Section VI of the Addendum to the EKAPCD CEQA Implementation Document; and/or
 - c) Compliance with an Alternative GHG Reduction Strategy as discussed in Section VII of the Addendum to the EKAPCD CEQA Implementation Document.

As such, project-generated emissions were compared to the applicable EKAPCD adopted GHG threshold of 25,000 MTCO₂e per year.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to greenhouse gases, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

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.

The proposed project would generate GHG emissions directly and indirectly during construction, routine operational and maintenance activities, and decommissioning activities. The majority of emissions from the project would be generated during construction and decommissioning activities.

Construction

During construction, GHG emissions would be generated from operation of both on-road and off-road equipment associated with various activities, including site preparation, grading, trenching, construction of roads, and installation of collector lines, electrical infrastructure, substations, energy storage systems, solar array modules, and the operations and maintenance building. Table 4.8-3, *Estimated Construction Emissions of Greenhouse Gases*, summarizes construction GHG emissions. As shown, the estimated total GHG emissions during project construction would be approximately 9,552 MTCO_{2e} over the 12-month construction period, or 318 MTCO_{2e} annually, when amortized over 30 years. The project's GHG emissions during construction would be below the EKAPCD annual threshold, and are considered to be less than significant.

Table 4.8-3. Estimated Construction Emissions of Greenhouse Gases

	Construction Emissions (MTCO _{2e})
2021	1,850
2022	7,702
Total	9,552
Amortized Construction Emissions (30 years)	318

Source: Stantec 2021a (see Appendix C-1).
Notes: MTCO_{2e} = metric tons carbon dioxide equivalent

Decommissioning

It was conservatively assumed that decommissioning of the project would use the same type and amount of equipment in a similar schedule to construction; therefore, decommissioning of the project was estimated to generate an equivalent amount of emissions as construction. This is a conservative estimate because on-road vehicles and off-site equipment would continue to improve in fuel efficiency, which has increasingly reduced emissions; as such decommissioning emissions in 30 to 40 years would likely be substantially lower than construction emissions. Estimated construction and decommissioning emissions related to the project amortized over 30 years, the anticipated project lifetime, would be approximately 318 MTCO_{2e} per year, well below the EKAPCD annual threshold. Additional details on calculations can be found in Appendix C-1 of this EIR.

Operation

Once the project is constructed and operational, the proposed project would have no major stationary emission sources and would require minimal vehicular trips. The project's GHG emissions during operations would be limited to vehicle trips associated with routine maintenance and monitoring activities at the project site, occasional landscaping equipment use, and energy use associated with water consumption. According to the *Traffic Impact Analysis* prepared for the project (Appendix K-1 of this EIR), there would be approximately 50 trips per day during operations. Operation of the proposed solar facility would result in substantially lower emissions than project construction. The total construction and decommissioning GHG emissions, amortized over 30 years, was added to the annual estimated operational emissions to estimate annual GHG emissions generated by the project. As shown in Table 4.8-4, *Estimated Annual Operational Greenhouse Gas Emissions*, the project would emit 907 MTCO_{2e} per year, throughout the operational life of the project (assumed 30 to 40 years). Therefore, operational emissions would not exceed EKAPCD threshold.

Table 4.8-4. Estimated Annual Operational Greenhouse Gas Emissions

	Annual Emissions (MTCO₂e)
Operational Area Source Emissions	<1
Operational Mobile Source Emissions	162
Operational Water Use Emissions	9
Amortized Construction and Decommissioning Emissions	636
Total Emissions	807
Annual Displaced GHG Emission	-398,439
Net Annual GHG Emissions	-397,632
EKAPCD CEQA/GHG Threshold	25,000
Significant Impact?	No
Source: Stantec 2021a (see Appendix C-1).	
Note: Numbers have been rounded to the nearest metric ton.	

Displacement of Greenhouse Gases

Operation of the project would create renewable energy over the planned 30- to 40-year project lifetime. This energy would displace GHG emissions that would otherwise be produced by existing power generation resources, including coal and natural gas/other non-renewables. The project has the capacity to generate approximately 500 MW of electricity at peak sun exposure.

The proposed renewable source of energy would displace electricity generated by natural gas combustion and provide low-GHG electricity to consumers. The estimated reduction in GHG emissions through electricity displacement is calculated by assuming that the solar power displaces electricity generated by dispatchable natural-gas fired combined-cycle power plants and that the project has a capacity factor of 26 percent. Natural gas energy requirements for generation by combined-cycle power plants and emission factors from the Climate Registry were used to estimate the displaced emissions. At 500 MW, the proposed project would displace 398,439 MTCO₂e per year and the net generation of annual GHG emissions would be -397,532 MTCO₂e, as shown in Table 4.8-4. Estimated Annual Operational Greenhouse Gas Emissions. Therefore, implementation of the proposed project would be regionally beneficial and would result in a less than significant impact associated with the generation of GHG emissions.

Sulfur Hexafluoride (SF₆)

The proposed on-site substations may feature circuit breakers that contain SF₆ gas, which is used as an insulator and an arc suppressor in the breakers. SF₆ is inert and nontoxic and is encapsulated in the breaker assembly. SF₆ is a GHG with substantial GWP because of its chemical nature and long residency time within the atmosphere. However, under normal conditions, it would be completely contained in the equipment and SF₆ would be released only in the unlikely event of a failure, leak, or crack in the circuit breaker housing. New circuit breaker designs have been developed to minimize the potential for leakage, compared to that of past designs, and the amount of SF₆ that could be released by the solar facility equipment would be minimal. Impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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.

CARB Climate Change Scoping Plan

The project would comply with the strategies recommended by the State of California, the USEPA, and the Climate Change Scoping Plan, as shown in Table 4.8-5, *California Greenhouse Gas Emission Reduction Strategies*. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of 100 percent of the RPS by 2045 as well as the other measures listed in Table 4.8-6, *Applicable Scoping Plan Strategies for Project*. These measures would primarily be those actions related to energy efficiency. A discussion of the consistency of the project with these measures is below. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the project.

Table 4.8-5. California Greenhouse Gas Emission Reduction Strategies

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.	These are CARB enforced standards; vehicles that access the project would be required to comply with CARB enforced standards.
Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning with the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	

Table 4.8 5. California Greenhouse Gas Emission Reduction Strategies, continued

Strategy	Project Design/Mitigation to Comply with Strategy
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	The project would be subject to State law.
Hydrofluorocarbon Reduction: (1) Ban retail sale of HFC in small cans; (2) require that only low GWP refrigerants be used in new vehicular systems; (3) adopt specifications for new commercial refrigeration; (4) add refrigerant leak tightness to the pass criteria for vehicular inspection and maintenance programs; and (5) enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for HFC reduction measures, any potential HFC products associated with the project would be required to comply with the CARB regulations.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Not applicable.
Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable.
Alternative Fuels – Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	Not applicable.
Alternative Fuels – Ethanol: Increased use of ethanol fuel.	Not applicable.
Achieve 50 percent Statewide Recycling Goal: Achieving the state’s 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989 (AB 939, Sher, Chapter 1095, Statutes of 1989) will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Zero Waste – High Recycling: Additional recycling beyond the state’s 50 percent recycling goal.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable.
Urban Forestry: A new statewide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Not applicable.
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable.
Water Use Efficiency: 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	Not applicable.
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (which apply to newly constructed buildings and additions to and alterations to existing buildings).	The project would be consistent with State law.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its appliance energy efficiency standards (which apply to devices and equipment using energy that are sold or offered for sale in California).	The project would be consistent with State law.

Table 4.8 5. California Greenhouse Gas Emission Reduction Strategies, continued

Strategy	Project Design/Mitigation to Comply with Strategy
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable.
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and services.	Not applicable.
Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high-density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing ITS, traveler information/traffic control, and incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	Not applicable.
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable.
Green Buildings Initiative: Green Building Executive Order S-20-04 (CA 2005) sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. Consistent with mitigation.	Not applicable.
California Solar Initiative: Installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	The project would result in an electric power generating capacity of approximately 500 MW. Therefore, the project would help support and not conflict with this strategy.

Table 4.8-6. Applicable Scoping Plan Strategies for Project

ID #	Sector	Strategy Name
T-1	Transportation	Advanced Clean Cars
T-2	Transportation	Low Carbon Fuel Standard
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
W-1	Water	Water Use Efficiency
CR-1	Electricity and Natural Gas	Energy Efficiency
H-6	High GWP Gases	SF ₆ Leak Reduction Gas Insulated Switchgear
Source: CARB 2014.		

Action T-1 relates to the Advanced Clean Cars program, in which the project’s employees would purchase vehicles in compliance with the CARB vehicle standards that are in effect at the time of the vehicle purchase. In addition, as it relates to the LCFS, under Action T-2, motor vehicles driven by the project’s employees would use compliant fuels.

Action E-3 relates to renewable energy and the RPS, which is intended to increase California’s renewable energy production to 20 percent by 2010, to 33 percent by 2020, and to 100 percent by 2045, pursuant to SB

100. Utilities would be required to meet the updated RPS goals of 60 percent by 2030, and 100 percent by 2045, pursuant to SB 100. A key prerequisite to reaching a target of 100 percent RPS would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The project proposes a solar array with an electric power generating capacity of approximately 500 MW. Therefore, the project would be consistent with Action E-3.

Action E-4 aims to install 3,000 MW of solar energy capacity under the Million Solar Roofs Program. This measure would offset electricity from the grid, thereby reducing GHG emissions. By requiring greater energy efficiency for projects that seek solar incentives, the State would be able to reduce both electricity and natural gas needs and their associated GHG emissions. The project would result in an electric power-generating capacity of approximately 500 MW. Therefore, the project would not conflict with Action E-4.

Action W-1 relates to water use efficiency. The state is currently implementing targeted water use efficiency programs as part of an integrated water management effort. Consistent with this measure, the project would utilize water panel washing, equipment washing, non-sanitary uses, and other miscellaneous uses, such as landscaping obtained on-site from existing wells or by truck. The water use during operation of the project would be done efficiently so as to reduce impacts to local water resources.

Action CR-1 relates to energy efficiency in commercial and residential buildings. Also, Action CR-1 notes the need for more aggressive utility programs to achieve long-term energy savings. The project would result in the development of PV solar energy-generating facilities that would provide renewable energy to California investor-owned utilities, which in turn would be used by commercial and residential buildings in the state. Therefore, the project is consistent with and would not obstruct Action CR-1.

Action H-6 relates to SF₆ from leakage of gas-insulated switchgear use in electricity transmission and distribution systems by setting limits on leakage rates and implementing best management practices for the recovery and handling of SF₆. Consistent with this action, the project would comply with any and all applicable regulatory requirements for any SF₆ containing switchgear.

Kern Council of Governments 2018 Regional Transportation Plan

The 2018 RTP incorporates local land use projections and circulation networks in city and County general plans. The 2018 RTP is not directly applicable to the project because the underlying purpose of the 2018 RTP is to provide direction and guidance by making the best transportation and land use choices for future development. Nevertheless, the project would not conflict with the goals and policies of the 2018 RTP. In addition, the project would not impact local transportation or land use during operation.

Other Federal/State/Local Policies

Table 4.8-7, *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, evaluates project consistency with other applicable federal, state and local policies regarding GHG emissions. As shown in the table below, the project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the project. As a renewable energy project, the project would be exempt from State annual GHG reporting requirements and would be considered consistent with California's Emission Performance Standard and RPS requirements (described in Section 4.8.3, *Regulatory Setting*).

Table 4.8-7. Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions

Adopted Plan, Policy, or Regulation	Consistency Determination	Project Consistency
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 25,000 ton/year rule trigger.
40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 75,000 ton/year rule trigger.
State		
SB 1368. EPS Standard.	Consistent	The project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.
SB 351. 50% RPS Standard.	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
SB 100. 60% Standard by 2030 and 100% by 2045	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
AB 32. Annual GHG Emissions Reporting	Not applicable	The project, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity-generating facilities as currently required by 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.).

Overall, because the main objectives of the project are to assist California investor-owned utilities in meeting their obligations under California's RPS program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020 as required by AB 32 and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan as well as applicable federal, state, and local policies. Specifically, the project would assist the state and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2030 and 2045 RPS, including the targets established under SB 100. Therefore, this impact would be less than significant.

Consistency with Kern County/California City General Plans

Additionally, the project would be consistent with the County's General Plan policy to encourage solar development to conserve fossil fuels and improve air quality, and with California City's General Plan policies to promote energy conservation and improve air quality. Given that Kern County and California City have not yet adopted GHG reduction plans, there are no other local measures or policies applicable to the proposed project. The project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, impacts 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 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 are measures and policies that could be undertaken. Moreover, the example measures may not be appropriate for every project, so the Attorney General suggests that the lead agency use its own informed judgment in deciding which measures to analyze and/or 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 these suggested measures would not be applicable to the project, since they are more appropriate for reducing long-term operational GHG emissions, and the majority of emission sources from the project are short term in nature. Long-term operational emissions would be minimal and more than offset by the renewable energy production.

The impacts of GHG emissions on climate change are indirect, as 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 GHG emissions to the levels required by AB 32, as well as state GHG emission reductions post-2020. As a renewable energy project, the project would contribute to achieving the mandated emission reduction targets established by AB 32. Additionally, the project would comply with any applicable forthcoming regulations or requirements adopted under AB 32 or imposed by the state or federal government. Therefore, considering the project's minimal annual emissions and anticipated reduction in overall GHG emissions, the project is not expected to significantly contribute to global warming or climate change.

Furthermore, as the project would have an electric power-generating capacity of approximately 500 MW, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's recommended measure to "install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's recommended measure regarding renewable energy. Because the project is below regional regulatory thresholds and would result in a reduction of GHG emissions, no mitigation measures would be required.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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 emissions and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California. In addition, Kern County has not adopted quantitative thresholds for determining significance of GHG emissions at the time of this writing. However, the EKAPCD has recently adopted the Addendum to its CEQA *Guidelines* titled: "Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency." This addendum is the policy that the EKAPCD will use when it is the lead agency for CEQA to determine the project-specific and cumulative significance of GHG emissions from new and modified stationary source (industrial) projects. Under this policy, a project is considered to have a cumulatively considerable impact if it generates 25,000 MTCO₂e or more per year.

Construction emissions would be finite and temporary and would cease at the end of construction activities. Once the project is constructed and operational, the proposed project would have no major stationary emission sources and would require minimal vehicular trips. Operational emissions would be negligible and would not exceed the EKAPCD threshold; refer to Impact 4.8-1. In addition to the project's GHG emissions, other cumulative projects in the Fremont Valley and western Antelope Valley, identified in Table 3-3, *Cumulative Projects List*, in Chapter 3, *Project Description*, largely consist of utility-scale alternative power generation facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 50 percent 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 percent by 2030. The project and other similar projects are essential to achieving the RPS.

The main contribution of GHG emissions from the project would be from construction equipment usage during the construction phase and motor vehicles trips by employees and maintenance vehicles during project operations. The major source of GHGs in California is associated with transportation, contributing more than 40 percent of the state's total GHG emissions. The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector. As stated, construction emissions from the proposed project and other projects identified in Table 3-3, *Cumulative Projects List*, would be finite and temporary and would cease at the end of construction activities.

As discussed in Impact 4.8-1, 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. It is estimated that the project would displace approximately 398,439 MTCO₂e annually over the project's anticipated lifespan. Therefore, the total GHG construction emissions associated with the project would likely be offset by less than one month of operations. 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. In contrast, as a solar PV facility, the project would help reduce regional GHG emissions in California during operation. Combined with other proposed renewable energy projects listed in Table 3-3, *Cumulative Projects List*, which would also offset GHG emissions from non-renewable energy sources, there would be a beneficial cumulative impact in terms of reduction in GHG emissions associated with electrical power production in the region. 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. 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

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Cumulative impacts would be less than significant.

City of California City

Cumulative impacts would be less than significant.

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Section 4.9

Hazards and Hazardous Materials

4.9.1 Introduction

This section discusses the existing conditions and regulatory setting related to hazards and hazardous materials in the project area, and describes the environmental setting for hazardous materials and waste, airports, and wildfire hazards. It also describes the project's potential impacts on residents and other sensitive receptors that could be exposed to potential hazards and/or hazardous materials and identifies mitigation measures where applicable. Impact analyses and determinations in this section are based on information obtained from the *Kudu Solar Farm Phase I Environmental Site Assessment* prepared by Stantec (Stantec 2019b; see Appendix H) located in Appendix H of this EIR.

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), and wildfire hazards. Residences and other sensitive receptors such as schools are also described as their proximate location to the project site affects 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.

As described in Chapter 3, *Project Description*, the project includes the development a solar facility and associated infrastructure with the capacity to generate up to combined 500 megawatts (MW) of renewable electrical energy and up to 600 megawatts of energy storage capacity on approximately 1,955 acres of privately owned land. The facility would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, energy storage system(s), inverter stations, and operations and maintenance facilities. The energy would originate from one or more on-site substations and ultimately be transferred to the Los Angeles Department of Water and Power's Barren Ridge Substation.

Existing Setting

The project site is predominantly vacant and undeveloped land located in portions of unincorporated Kern County and California City, north of the California City Municipal Airport. The project site is adjacent to the approved Eland Solar Farm, south of the existing Springbok 1 and 2 Solar Farms, and southeast of the Los Angeles Department of Water and Power Beacon solar facility. State Route (SR) 14 runs near the western border of the project site, and an existing Union Pacific rail line runs through the project site. The project site is transected by both east–west traversing Phillips Road and Washburn Road, with the Southern Pacific Railroad on its western boundary.

Approximate elevations within the project site range from 2,174 feet above mean sea level (amsl) at the northeastern portion of the site to roughly 2,460 feet amsl at the southeast portion of the project site. The project site is relatively flat and features numerous ephemeral desert drainages trending to the northeast, which ultimately drain into Koehn Dry Lake, located to the northeast of the project site. Native vegetation

on-site is typical of that found throughout the Mojave Desert, dominated by creosote bush and white bursage on slopes and plains and saltbush scrub in the alkaline basin. Many of the project parcels have been previously disturbed and/or cultivated. Currently, these areas include fallow agricultural fields and cleared parcels that were never put into agricultural production. Much of this fallowed land is still barren of native shrub cover and has been colonized by rubber rabbitbrush.

The southern portion of the project site is located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP) for the California City Municipal Airport. Site 2 of the project site is located immediately north of the California City Municipal Airport. Specifically, the southernmost portion of Site 2 is in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). Zone B1 is subject to substantial risk and substantial noise, and Zone C is subject to limited risk and frequent noise intrusion. The Kern County Airport ALUCP covers operations at the County’s airports, as well as Edwards Air Force Base.

According to the Fire Hazard Severity Zone map published by the California Department of Forestry and Fire Protection (CalFire), the project site is not located within or near a state responsibility area (SRA) or lands classified as very high fire hazard severity zones (CalFire 2007a); refer to Figure 4.17-1, *State Responsibility Areas*. The project site is located outside of areas identified by CalFire as having a substantial or very high risk for wildfire to occur. The project site is located within a local responsibility area (LRA) and is designated as LRA Moderate (CalFire 2007b); refer to Figure 4.17-2, *LRA Responsibility Areas*. Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior.

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.

Recognized Environmental Conditions

A recognized environmental condition (REC) is one of the terms used to identify environmental liability within the context of a Phase I Environmental Site Assessment (ESA). ASTM International defines an REC

as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” De minimis conditions are minor occurrences of contamination that generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

A Phase I ESA was conducted on the project site to review, evaluate, and document present and past land uses and practices, and visually examine site conditions to identify RECs. Based on the results of the Phase I ESA, there are no RECs identified in connection with the project site (Stantec 2019b).

Photovoltaic Solar Panels and Cadmium Telluride

Photovoltaic (PV) solar panels that would be installed on the project site are made from monocrystalline silicon, polycrystalline silicon, or thin film technology. Polycrystalline silicon solar 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 solar panels would not be a source of pollution to surface water, stormwater, or groundwater. Polycrystalline silicon panels removed from the site (i.e., during project decommissioning) would be recycled or otherwise disposed at an appropriate waste disposal facility. In addition, the energy storage facility could include ion batteries containing chemical contents that are considered hazardous, as well as lead acid, sodium sulfur, and/or sodium or nickel hydride.

Although the specific type of PV solar modules has not been selected for the project, it is conceivable that the modules may utilize cadmium telluride (CdTe) thin film technology. The semiconductor layer in the CdTe 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 solar module with the PV solar module containing less than 0.1 percent Cd content by weight. Due to 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 solar module less than that of 1 C– size flashlight nickel-cadmium (NiCd) battery.

It has been demonstrated that standard operation of CdTe PV solar systems does not result in cadmium emissions to air, water, or soil. During the PV solar 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 solar modules. These studies have consistently concluded that during normal operations, CdTe PV solar 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. Disposal risks of end-of-life CdTe PV solar 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. Additionally, the PV solar module manufacturer provides CdTe module collection and recycling services. Since 2005, the end-of-life CdTe PV solar 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 solar modules are an article of commerce and are not classified as a hazardous material for shipping purposes under either federal and/or State law.

Electromagnetic Fields

Electromagnetic fields (EMFs) are associated with electromagnetic radiation, which is energy in the form of photons. Radiation energy spreads as it travels and has many natural and human-made sources. The electromagnetic spectrum, the scientific name given to radiation energy, includes light, radio waves, and x-rays, among other energy forms. Electric and magnetic fields are common throughout nature and are produced by all living organisms. Concern over EMF exposure, however, generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems.

Commonly known human-made sources of EMFs 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.

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, the 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.

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 land is covered with structures (e.g., in developed cities which support concrete buildings and asphalt roads) that absorb and store significantly more heat during the day than the undeveloped earth surface. Additionally, such cities typically incorporate energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of PV solar panels mounted on aluminum and steel support structures, restricting sunlight from reaching the ground surface. However, the project site would not be covered entirely with

solar panels. Additionally, 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. Solar panels store less heat than the earth because they consist of a thin, lightweight glass that is surrounded by airflow. Heat dissipates quickly from a solar panel compared with solid earth, which dissipates heat slowly. The project would also include energy-consuming devices (e.g., inverters). Therefore, marginal amounts of waste heat may be generated on the project site. There is nothing in the record to date that would indicate that the project would significantly increase ambient air temperatures outside the project site.

In a study entitled "*Analysis of the Potential for a Heat Island Effect in Large Solar Farms*," 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 the University of Nevada of Las Vegas 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 highway traffic and train traffic. Sensitive receptors located in the project area consist predominantly of rural residential dwellings located at varying distances from the project site. The Fremont rural community is located in the project vicinity and consists predominantly of rural residential dwellings.

As discussed in Section 4.12, *Noise*, of this EIR, construction activities could cause periodic increases in ambient noise levels at the nearest sensitive receptors when compared to the relatively quiet noise environment in the project area. However, such increases would be temporary and would not substantially disrupt or otherwise adversely affect residential uses. Refer also to Figure 4.12-3, *Location of Sensitive Receptors Closest to Project Site*, in Section 4.12, *Noise*, of this EIR.

High Winds

Solar panel structures and supports would be designed to meet applicable wind code requirements per the California Building Code (CBC). The project site itself is not in a special wind speed zone, so equipment would be designed to withstand standard building code wind speeds of up to 80 to 90 miles per hour (mph). Equipment wind ratings would be a function of the racking system design and the final panel choice (to a lesser extent). Design features such as the sizes of posts, supports, and brackets can be adjusted to account for higher winds. All manufacturers' standard equipment would be designed to meet standard International Building Code (IBC) and CBC requirements.

The wind tolerance of a tracking system can also be maximized by rotating the panels to the proper stow angle during a high wind event. This angle is typically horizontal or near horizontal, depending on the

individual manufacturer's design. This minimizes the cross section of the panel that is exposed to the wind and consequently, minimizes the potential for damage.

Hazardous Materials Transportation

SR 14 runs near the western border of the project site, and an existing Union Pacific rail line runs through the project site. The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway that is not designated for that purpose, unless the use of a highway is required to permit delivery or the loading of such materials (California Vehicle Code, Sections 31602 (b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is provided in Section 4.9.3, *Regulatory Setting*, below. According to Section 2.5.4 of the Kern County General Plan Circulation Element, SR 14 is designated as an adopted commercial hazardous materials shipping route.

Airports

The southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. As shown in Figure 3-6, *ALUCP in Relation to the Project Site*, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). According to Table 2A – Compatibility Criteria of the Kern County ALUCP, Compatibility Zone B1 is subject to significant noise levels; Compatibility Zone C is subject to frequent noise intrusion. Table 4.9-1, *ALUCP Compatibility Criteria*, describes the Compatibility Criteria for each zone.

The project site is also located in the adopted Military Aviation boundaries for the ALUCP for the R-2508 Airspace Complex for Edwards Air Force Base and China Lake Naval Weapons Station. The Kern County Zoning Ordinance (Figure 19.08.160) requires military review for all wind turbines and communication towers over 80 feet and all other structures over 100 feet above ground surface elevation. Figure 4.9-1, *Restricted Use and Special Use Airspace Over the Project Site*, identifies the location of the project within the Airport Influence Area and the R-2508 Complex.

The Mojave Air and Space Port is a public airfield operated by the East Kern Airport District (EKAD) and located approximately 10 miles southwest of the project site. This airport has three asphalt runways (with lengths of 3,946, 7,049, and 12,503 feet) and primarily serves general aviation aircraft, with some commercial, air taxi, and military flights also using the facility. In operation since 1940, the airport serves an average of 48 flight operations per day. In 2004, this facility was the first to be certified as a spaceport by the FAA. The project site is located within the Airport Influence Area of the Mohave Air and Spaceport and would therefore be subject to review by the EKAD to ensure conformance with any designated restrictions (e.g., building height, glare, electrical interference).

Table 4.9-1. ALUCP Compatibility Criteria

Zone	Location	Impact Elements	Maximum Densities		Required Open Land
			Residential (du/ac)	Other Uses (people/ac)	
A	Runway Protection Zone or within Building Restriction Line	<ul style="list-style-type: none"> High risk High noise level 	0	10	All Remaining
B1	Approach/Departure Zone and Adjacent to Runway	<ul style="list-style-type: none"> Substantial risk – aircraft commonly below 400 feet AGL or within 1,000 feet of runway. Significant noise 	0.1	60	30%
B2	Extended Approach/Departure Zone	<ul style="list-style-type: none"> Significant risk – aircraft commonly below 800 feet AGL. Significant noise 	0.5	60	30%
C	Common Traffic Pattern	<ul style="list-style-type: none"> Limited risk – aircraft at or below 1,000 feet AGL. Frequent noise intrusion 	15	150	15%
D	Other Airport Environs	<ul style="list-style-type: none"> Negligible risk Potential for annoyance from overflights 	No Limit	No Limit	No Requirement
E	Special Land Use	<ul style="list-style-type: none"> Compatibility issues 	15	150	No Requirement

Source: Kern County 2012.
 Note: Additional criteria are provided in Table 2A of the Kern County Airport Land Use Compatibility Plan.

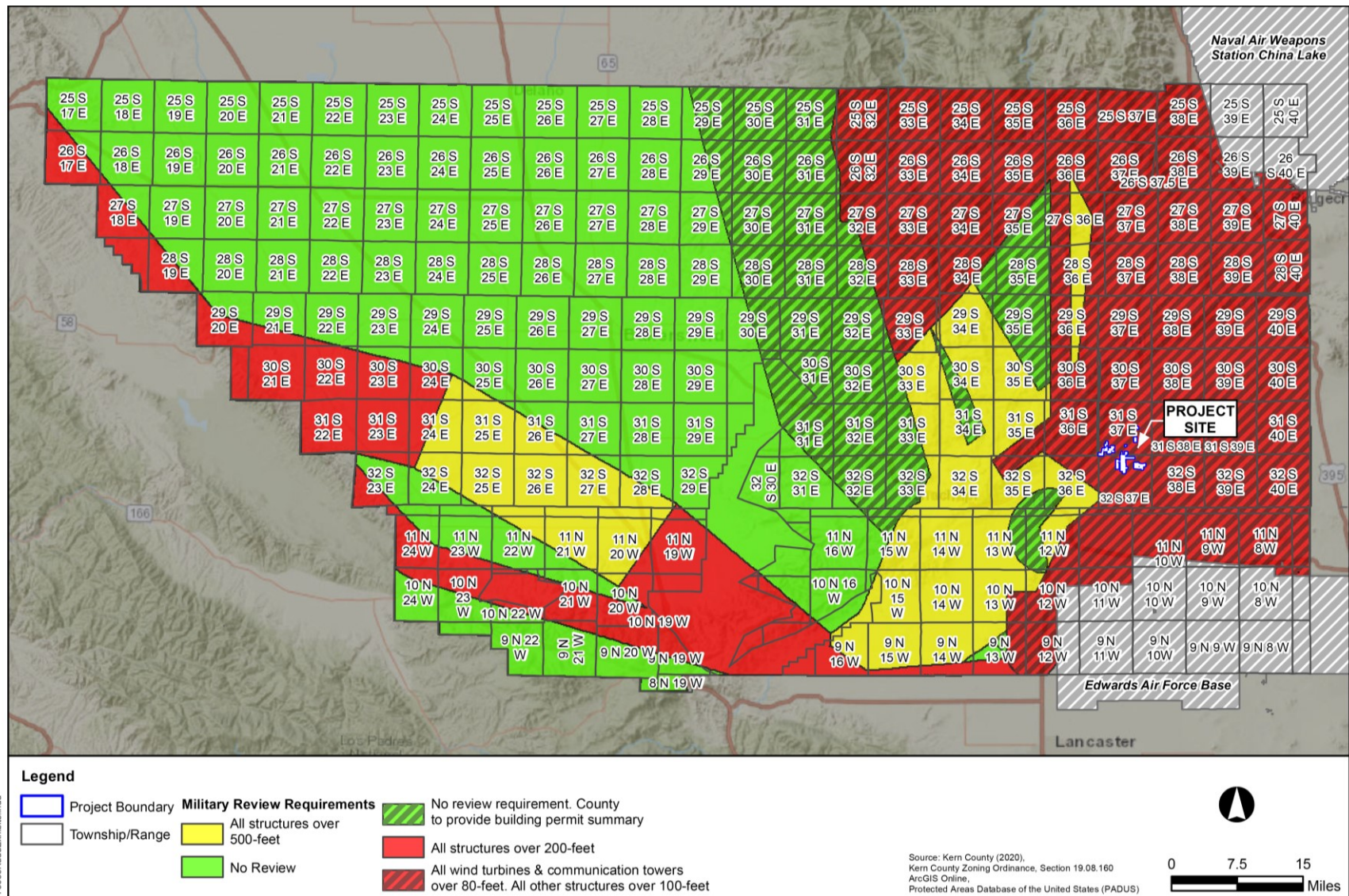


Figure 4.9-1. Restricted Use and Special Use Airspace Over the Project Site

Fire Hazard Areas

The California Department of Forestry and Fire Protection (CalFire) requires counties within the State to develop fire protection management plans that address potential threats of wildland fires. The Kern County Wildland Fire Management Plan identifies federal, State, and local responsibility areas for the entire County to facilitate coordination efforts for fire protection services.

As stated previously, the project site is not located within or near a SRA or lands classified as very high fire hazard severity zones (CalFire 2007a); refer to Figure 4.17-1, *State Responsibility Areas*. The project site is classified as LRA Moderate (CalFire 2007b); refer to Figure 4.17-2, *LRA Responsibility Areas*. Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior.

4.9.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) 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 EPA's mission is to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. The EPA 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 EPA 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 (TSCA; 1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. The 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,” was 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 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 (SPCC) 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 EPA 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, 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 “Navigable Waters” of the United States.

Other Regulations

Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 -- Water Programs, 40 CFR Parts 239 to 259 – Solid Wastes, and 40 CFR Parts 260 to 279 – Hazardous Waste. These regulations designate hazardous substances under 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) 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 and include requirements for the preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may identify appropriate mitigation measures if required. 29 CFR Section 1910.120(e) requires all employees working on sites potentially exposed to hazardous substances, health hazards, or safety hazards, as well as the 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.

National Weather Service

Under extreme fire weather conditions, the National Weather Service (NWS) issues Red Flag Warnings for all affected areas. A red flag warning means that any ignition could result in a large-scale damaging wildfire. A fire weather watch is issued when weather conditions conducive to fire hazards may exist in the next 12-72 hours. The project site is located in Fire Watch Zone 299 (GACC 2021). Criteria for red flag warnings in Fire Watch Zone 299 are the following: Relative humidity of 15 percent or less with sustained winds 25 miles per hour (mph) or greater for a duration of eight hours or more (GACC 2021).

Federal Aviation Administration

The Federal Aviation Administration (FAA) regulates aviation at regional, public, private, and military airports, such as Edwards Air Force Base. The FAA regulates objects affecting navigable airspace and structures greater than 200 feet in height according to Federal Aviation Regulations 14 CFR Part 77.13. The U.S. and California Departments of Transportation also require the operator to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration. According to 14 CFR Part 77.17, notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing adverse impacts on the safe and efficient use of navigable airspace. Any structure that would constitute a hazard to air navigation, as defined in FAA Part 77, requires issuance of a permit from California Department of Transportation's Aeronautics Program. The permit is not required if the FAA aeronautical study determines that a structure would not impact air navigation.

As described in 14 CFR 77.13 (Construction or Alteration Requiring Notice), each sponsor who proposes any of the following construction or alteration scenarios shall notify the FAA in the form and manner prescribed in 14 CFR 77.17:

- a) Any construction or alteration of more than 200 feet in height above the ground level at its site; or
- b) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes:
 - 1) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport. These airports and heliports include: an airport that is available for public use and is listed in the Airport Directory of the current Airman's Informational Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement; an airport under construction, that is the subject of a notice or proposal on file with the FAA, and, except for military airports, it is clearly indicated that the airport will be available for public use; an airport that is operated by an armed force of the United States;
 - 2) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport, with its longest runway no more than 3,200 feet in actual length, excluding heliports; and
 - 3) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport.
- c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance,

15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.

- d) Any construction or alteration on any of the following airports and heliports:
- 1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
 - 2) A military airport under construction, or an airport under construction that will be available for public use;
 - 3) An airport operated by a federal agency or the DOD; or
 - 4) An airport or heliport with at least one FAA-approved instrument approach procedure.
- e) You do not need to file notice for construction or alteration of:
- 1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;
 - 2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
 - 3) Any construction or alteration for which notice is required by any other FAA regulation; or
 - 4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Per 14 CFR 77.17, notification requirements including sending one executed form set (four copies) of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office, having jurisdiction over the area within which the construction or alteration will be located. The notice required must be submitted at least 30 days before the earlier of the following dates: (1) the date the proposed construction or alteration is to begin; or (2) the date an application for a construction permit is filed.

A permit is not required if the FAA aeronautical study determines that the structure has no impact on air navigation.

As described in 14 § CFR 77.9 (Construction or alteration requiring notice), each sponsor who proposes any of the following construction or alteration scenarios shall notify the FAA in the form and manner as follows:

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

- a) Any construction or alteration that is more than 200 feet above ground level (AGL) at its site.

- b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
 - 1) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 feet in actual length, excluding heliports.
 - 2) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.
 - 3) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.
- c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
- d) Any construction or alteration on any of the following airports and heliports:
 - 1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
 - 2) A military airport under construction, or an airport under construction that will be available for public use;
 - 3) An airport operated by a Federal agency or the DOD; or
 - 4) An airport or heliport with at least one FAA-approved instrument approach procedure.
- e) You do not need to file notice for construction or alteration of:
 - 1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;
 - 2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
 - 3) Any construction or alteration for which notice is required by any other FAA regulation; or
 - 4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Per 14 CFR 77.7, notification requirements include sending one executed form set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area within which the construction or alteration will be located. The notice required must be submitted at least 45 days before the earlier of the following dates: (1) the date the proposed construction or alteration is to begin, or (2) the date an application for a construction permit is to be filed.

The U.S. Air Force (USAF) implements FAA and Department of Defense (DoD) policy and guidance regarding Special Use Airspace and Airspace for Special Use through various instructions, processes and organizations. The Air Force Flight Standards Agency, AF/A30, Headquarters Air Force (HAF) Encroachment Management Working Group, major command (MAJCOM) and Unit Airspace Managers are responsible for identifying and evaluating projects which may adversely affect operations associated with military airfields, ranges, and airspace.

State

California Public Utilities Commission (CPUC) General Order 95 (GO 95): Rules for Overhead Electric Line Construction

Adopted in 1941 and updated most recently in 2012, 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. Rule 35 guidelines require 10-foot radial clearances for any conduction 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 to ensure that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

Power Line Hazard Reduction (PRC 4292)

Public Resources Code (PRC) 4292 requires a 10-foot clearance around any tree branches or ground vegetation at the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296. Project structures would be exempt primarily because of their design specifications.

Power Line Clearance Required (PRC 4293)

PRC 4293 provides guidelines for line clearance, including a minimum of 10 feet of vegetation clearance around any conductor operating at 110 kV or higher.

Minimum Clearance Provisions (14 CCR 1254) and Exemptions (14 CCR 1255)

With respect to minimum clearance requirements, 14 CCR 1254 presents guidelines pertaining to nonexempt utility poles. Some utility poles are exempt under 14 CCR 1255; exemptions are determined by utility pole characteristics such as conductor continuousness and fire propagation potential. The project structures would be exempt from the clearance requirements, with the exception of cable poles and dead-end structures.

The firebreak clearances required by 14 CCR 1254 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from the minimum clearance requirements by the provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 10 feet, which is measured horizontally from the outer circumference of the specified pole or tower, with the height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space would be treated as follows:

- At ground level: Remove flammable materials, including ground litter, duff, and dead or desiccated vegetation that would propagate fire.
- From 0 to 8 feet above ground level: Remove flammable trash, debris, or other materials, grass, and herbaceous and brush vegetation. Remove all limbs and foliage of living trees up to a height of 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.

California Building Code, Section 608

Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kilowatt hours, 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.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step; they are not considered hazardous waste. Health

concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

A Hazardous Materials Business Plan (HMBP) must be submitted to the local Certified Unified Program Agency (the Kern County Public Health Services Department/Environmental Health Services 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 HMBP 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 (California Governor's Office of Emergency Services 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; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the Department of Toxic Substances 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 On-site Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;
- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or “Community-Right-To-Know”);
- California Accidental Release Prevention Program (Cal ARP);
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The CUPA in Kern County is the Environmental Health Division of the Kern County Public Services Department.

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 and unified California’s environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards, California Department of Resources Recycling and Recovery, 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 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 the State. DTSC regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, California Department of Public Health lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

California Office of Emergency Services

In order to protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing Statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available on-site to firefighters, public safety officers, and regulatory agencies. Typically, this information is included in business plans in order to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of such materials into the workplace or environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1—Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2—Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2, Office of Emergency Services, Chapter 4 - Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum Statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7; (2) emergency response plans and procedures in accordance with Section 2731; and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business is required to prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;
- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or
- Hazardous waste in any quantity.

California Occupational Safety and Health Administration

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 (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the CHP, is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5] [1157–1157.8]). Transportation of radioactive materials is restricted to specific safe routes.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Fremont Interim Rural Community Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, as well as the California City General Plan and California City Zoning Ordinance, all of which include policies pertaining to the avoidance of hazards and adverse effects related to hazardous materials.

The policies, goals, and implementation measures in the Kern County General Plan related to hazards and hazardous materials that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

The goals, policies, and implementation measures in the Kern County General Plan for hazards and hazardous materials applicable to the project are provided below.

Chapter 1. Land Use, Open Space and Conservation Element

1.3. Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries and property damage, and minimize economic and social diseconomies resulting from natural disaster by directing development to areas that are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map

Codes 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in an unmitigated significant impact.

Chapter 2. Circulation Element

2.5.4 Transportation of Hazardous Materials

Transportation-related accidents and spills of hazardous materials pose a serious threat to the traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a short-term threat to public health.

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policies

Policy 1: The commercial transportation of hazardous material[s], 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, 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

Policy

Policy 2: Innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.

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 on-site hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.4.5. Solar Energy Development

Policy

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

Chapter 6. Safety Element

6.7 Human-Induced Hazards Goals, Policies and Implementation Measures

Goals

- Protect residents, businesses, and structures from human-induced hazards related to ground transportation, aircraft over flight, hazardous materials, and other human activities.

Policies

- Ensure that hazardous materials used by commercial and industrial land uses are properly transported, handled, and used, and that information on their handling, transport, and use is available to the California City Fire Department and other safety agencies in accordance with the Fire Code.
- Require that new development proposals be consistent with the Kern County Airport Land Use Compatibility Plan in order to eliminate hazards due to land use conflicts with the California City

Municipal Airport, the Mojave Airport, Edwards Air Force Base, and other military over flight activities.

- Coordinate with the State to identify and monitor hazardous sites located within and/or adjacent to the General Plan Planning Area.

Implementation Measures

S-7: The City shall require commercial and industrial businesses to meet the procedures for the proper transport, use, storage, and disposal of hazardous waste as required by the Kern County Waste Management Department, the California City Fire Department, and Kern County Department of Environmental Health Services. These procedures shall include, but are not limited to, the following:

- Submittal of a business plan for small quantity waste generators to the Kern County Department of Environmental Health Services and the California City Fire Department.
- Submittal of a source reduction plan for large quantity generators that addresses the potential of treating waste on site and the proper transportation and disposal of waste off site. These plans are reviewed by the Kern County Department of Environmental Health services and the California City Fire Department.
- Evaluation of funding sources for waste management and disposal programs.
- Coordination with the State Department of Health Services.

S-9: The City shall require that transporters of hazardous waste travel on designated Commercial Hazardous Waste Shipping Routes.

S-12: The City shall require that new development proposals be reviewed for compatibility with the adopted Airport Land Use Compatibility Plan. Appropriate limitations and conditions shall be incorporated into the conditions of the project approval to address compatibility with the California City Municipal Airport, the Mojave Airport, and encroachment issues for the Edwards Air Force Base, Naval Air Weapons Station China Lake, and the Military Complex Airspace. Incompatible uses shall not be permitted unless appropriate findings regarding public health, safety, and military readiness can be made.

Kern County Multi-Hazard Mitigation Plan

The latest Kern County Multi-Hazard Mitigation Plan was developed in 2006. The plan was developed by a Hazard Mitigation Planning Committee and identifies goals, objectives and actions pertaining to mitigating impacts from identified natural hazards. The public at large had an opportunity to comment prior to the completion of the plan's final draft. The Federal Emergency Management Agency (FEMA) realizes the importance of mitigation planning and offers incentives to communities that develop one. By following FEMA guidelines for approval of this plan, Kern County can be eligible for grant funding intended for mitigation projects.

Kern County Wildland Fire Management Plan

The Kern County Fire Department (KCFD) Wildland Fire Management Plan documents the assessment of wildland fire situations throughout SRAs within the County. The KCFD Wildland Fire Management Plan provides for systematically assessing the existing levels of wildland protection services and identifying high-risk and high-value areas that are potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. Based on this assessment, preventive measures are implemented, including the creation of wildfire protection zones.

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments made to more specifically address conditions in Kern County. 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; and the installation and maintenance of adequate means of egress. It also provides for the issuance of permits and collection of fees related to such activities.

Kern County Fire Department (KCFD) Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March 2018, is the current document that assesses the wildland fire situation throughout the SRA within Kern County. The document includes stakeholder contributions and priorities and identifies strategic targets for pre-fire solutions as defined by the people who live and work in the local area. The plan provides a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. The plan gives an overview of KCFD battalions and ranks these areas in terms of priority needs, as well as identifying the SRA areas. According to the plan, 69 percent of the land area within Kern County is located within a SRA. The County is divided into six fuel management areas: Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 1 (Tehachapi) (KCFD 2018).

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 2019 County Fire Code 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. Ground-mounted solar panel requirements identified by this Standard address water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD 2019).

Kern County Public Health Services Department/Environmental Health Services Division

The Kern County Public Health Services Department/Environmental Health Services Division/Hazardous Materials Section is the CUPA for the project area, which provides site inspections of hazardous materials programs (aboveground storage tanks, underground storage tanks, 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 California 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 effect 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 on-site 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 Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. The ALUCP maps airport influence areas as zones as A, B1, B2, C, D, E1 and E2, ranging from the most restrictive Zone A to the least restrictive Zone E, and identifies polices and compatibility criteria within each of those zones.

Proposals for public or private land use developments that occur within defined airport influence areas are subject to compatibility review. The principal airport land use compatibility concerns addressed by the ALUCP are (1) exposure to aircraft noise; (2) land use safety with respect to both people and property on the ground and the occupants of the aircraft; (3) protection of airport air space; and (4) general concerns related to aircraft overflights.

The southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. Specifically, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14).

Kern County Zoning Ordinance

The Kern County Zoning Ordinance identifies 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

The methodology for determining impacts related to hazardous materials focuses on (1) the potentially significant impacts related to the routine transport, use, or disposal of hazardous materials and the release of hazardous materials into the environment; (2) hazards related to the Kern County Airport Land Use Compatibility Plan; and (3) proposed project components that could result in environmental contamination. The methodology for determining impacts relating to wildland fires focuses on the fire severity at the project site and the surrounding areas based on existing State and local maps and land characteristics.

Thresholds of Significance

As established in Appendix G of the CEQA Guidelines, the Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria to determine if a project would potentially have a significant adverse effect related to hazards and hazardous materials.

The project could 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) Impair implementation of, or physically interferes with, an adopted response plan or emergency evacuation plan;
- g) 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
- h) 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:

1. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
2. Are associated with design, layout, and management of project operations; and
3. Disseminate widely from the property; and
4. 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; these issue areas are thus scoped out from further analysis in this EIR. It was determined that the project would not:

- 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;

There are no existing or proposed schools located within one-quarter mile of the project site. The nearest school is California City High School located approximately three miles southeast from Site 2 at 8567 Raven Way in California City. Furthermore, the fully functional solar farm would not generate air emissions from any stationary sources, and occasional emissions from combustion engine powered maintenance machinery and automobile traffic from on-site workers would not result in hazardous emissions. Consequently, the project would not generate hazardous emissions or involve handling hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. No impacts are anticipated. Therefore, further analysis of this issue is not warranted.

- 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; and

The project site is not identified in any of the California hazardous materials databases. Searches were completed for the subject parcels in the following hazardous materials lists: California Environmental Protection Agency's (CalEPA) Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and GeoTracker, the California database of leaking underground storage tanks. Finally, as provided by CalEPA, there are no active Cease and Desist Orders or Clean Up and Abatement Orders for hazardous materials/facilities in the immediate project vicinity of the project site. Therefore, no impacts are anticipated, and further analysis is not warranted.

- h) 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:

1. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
2. Are associated with design, layout, and management of project operations; and
3. Disseminate widely from the property; and
4. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.

Project-related infrastructure is not expected to result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents. During construction and operation, workers would generate small quantities of solid waste (trash, food containers, etc.) that would be stored on site in fully enclosed containers, then transported to and disposed of at approved disposal facilities. Project-related infrastructure is not expected to result in features or conditions (such as standing water, agricultural products, agricultural waste, or human waste) that would provide habitat for vectors such as mosquitoes, flies, cockroaches or rodents. Construction workers would generate only small quantities of solid waste (i.e., trash) that would be appropriately stored for permanent disposal off-site. Therefore, potential impacts would be negligible, and no further analysis is warranted.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to hazards and hazardous materials, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures

required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

The proposed project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Most of the hazardous waste generated by the project would occur during the construction period and would consist of liquid waste, including cleaning fluids, dust palliative, herbicides, and solvents. Some solid hazardous waste, such as welding materials, may also be generated during construction. These materials would be transported to the project site during construction, and any hazardous materials that are produced as a result of the construction of the project would be collected and transported away from the site for disposal in an approved off-site waste disposal facility. During project construction, material safety data sheets for all hazardous materials present on-site would be made readily available to on-site personnel to ensure awareness and proper handling in accordance with required Best Management Practices (BMPs) as part of a Stormwater Pollution Prevention Plan (see Section 4.10, *Hydrology and Water Quality*). Workers would be trained to properly identify and handle all hazardous materials.

During construction, non-hazardous construction debris would be generated and would be disposed of off-site in an approved local landfill. Sanitary waste would be managed using portable toilets located at a reasonably accessible on-site location. As discussed in Section 4.16, *Utilities and Service Systems*, Mitigation Measures MM 4.16-1KC and MM 14.16-1CC would require debris and waste generated during construction to be recycled to the extent feasible during construction, operation, and decommissioning and designation of a Recycling Coordinator to facilitate recycling of all waste through coordination with the on-site contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.

Fuels and lubricants used on field equipment would be subject to a Material Disposal and Solid Waste Management Plan, and SPCC plan. 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. Overall, the relatively limited use of hazardous materials, as well as the 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* which was adopted by both Kern County and the City of California City, along with other incorporated cities in the County. As such, project construction is not anticipated to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Overall, the relatively limited use of hazardous materials, and subsequent 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. Impacts would be less than significant.

Operation

Operation and maintenance (O&M) activities associated with a PV solar facility are minimal and would require limited use of hazardous materials. Those that would be used would be stored on-site in designated, secured areas. The site would be fenced to prevent public access to hazardous materials and the PV solar panels.

Operational activities would be limited to monitoring facility performance and conducting scheduled or emergency maintenance of on-site electrical equipment and/or the gen-tie line. No heavy equipment would be routinely used during normal project operation. O&M vehicles would include trucks (i.e., pickup, flatbed), forklifts, and/or loaders for routine and unscheduled maintenance, as well as water trucks for solar panel washing. Large heavy-haul transport equipment and cranes may be brought to the project site when needed 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 typically have an operating life of 30 or more years. 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. The project would also include operational and maintenance protocols that would be used to identify and remove damaged or defective PV solar modules during annual inspections. Implementation of Mitigation Measures MM 4.9-1KC and MM 4.9-1CC would ensure that all handling, storage, and disposal of hazardous materials associated with project operation would be conducted in accordance with standard practices to minimize potential exposure of workers or the public.

The PV solar modules installed on the project site may utilize CdTe thin film technology. 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. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV solar modules 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 solar modules also conform to Underwriters Laboratory (UL) 1703, a standard established by the independent product safety certification organization. In accordance with UL 1703, PV solar modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance. Studies indicate that unless a PV solar module is purposefully ground to a fine dust, use of CdTe in PV solar modules does 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 solar 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 (Sinha et al. 2018, 2019).

Project operations would require the use of transformer oil at the project substation(s) and the energy storage facility could contain battery acids, as well as lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and battery storage would operate 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. In addition, implementation of Mitigation Measures MM 4.9-1KC and MM 4.9-1CC would require 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; such requirements 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 the proposed project would interconnect into the existing Los Angeles Department of Water and Power's Barren Ridge Substation. The proposed project intends to share the Eland gen-tie line to minimize potential environmental impacts. In addition, the project would not construct sensitive uses under the existing lines and 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

During the decommissioning process, it is anticipated that all project structures would be fully removed from the ground. Above-ground equipment that would be removed would include the PV solar panels, 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 off-site. Removal of the PV solar 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 an approved off-site disposal facility. Once the PV solar 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 fencing/gates; concrete pads that may support the inverters, transformers, and related equipment; and underground conduit/electrical wiring, and all materials would be recycled to the extent feasible. The affected land area would be thoroughly cleaned and all debris removed and properly disposed of off-site. As discussed above, the majority of the panel materials would be recycled, thereby resulting in minimal disposal of solid waste in area landfills, consistent with applicable regulations.

It is anticipated that the PV solar module manufacturer would provide CdTe module collection and recycling services. Current CdTe PV solar modules are constructed to 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 were to be disposed of in a landfill. As noted above, several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV solar 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 solar 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 solar module is purposefully ground to a fine dust, use of CdTe in PV solar modules do not generate emissions of CdTe (Fthenakis 2003). Such studies have consistently concluded that use of CdTe PV solar 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 described in Section 4.16, *Utilities and Service Systems*, Mitigation Measures MM 4.16-1KC and MM 4.16-1CC require that an on-site recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the on-site contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The on-site recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and local 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 and California City Community Development Department prior to issuance of building permits. Given that the normal use and disposal of CdTe PV solar modules would not present an environmental risk, project decommissioning would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would further reduce impacts related to hazards to less than significant.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.16-1KC would be required (refer to Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

MM 4.9-1KC: 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.

City of California City

Implementation of Mitigation Measure MM 4.16-1CC would be required (refer to Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

MM 4.9-1CC: 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 City of California City.

- 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 California City prior to issuance of a building permit.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.9-1KC and MM 4.16-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.9-1CC and MM 4.16-1CC, 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

Construction of the project may result in temporary hazards related to the transport and use of hazardous materials, including those used for construction vehicle use and maintenance (diesel fuel, motor oil, etc.), construction waste, components of construction materials (e.g., cement), or other such materials. Mitigation Measures MM 4.9-1KC and MM 4.9-1CC, as described above, would be implemented to reduce the potential for impacts related to the accidental release of hazardous materials into the environment to a less-than-significant level.

As previously noted, the Phase I ESA prepared for the subject site did not identify any RECs on the project site and/or in the immediate vicinity, and therefore, the potential to encounter any such hazards during construction is not anticipated (Stantec 2019b). However, according to the California Department of Conservation – Geologic Energy Management (CalGEM), there are two oil wells found on the project site. The National Security Oil Co. “1” (API: 0402932491) and Childs-Wall “1” (API: 0402932490) wells are designated as plugged dry holes on the CalGEM Well Finder. National Security Oil Co. “1” was drilled to 111 feet in the 1920s and is located in the northern portion of APN 302-32-101. Childs-Wall “1” was drilled in 1945 to a depth of 2,232 feet and was recorded to be located within the northwest portion of APN 302-020-14. Both wells do not have casings and would not be able to be located using geophysical survey methods. Given the proposed use of the property as a solar farm, the wells are considered unlikely to represent an environmental concern. As a result, construction and development of the project is unlikely to expose employees or construction workers to potential hazardous substances. Potential hazards could include oil spills, the release of hydrocarbons or other toxic dangerous chemicals associated with oil into the air, and the dangers associated with operating a facility near an oil well.

Potential impacts that may result from construction of the proposed project may include the accidental release of storage materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. Implementation of Mitigation Measures MM 4.9-1KC and MM 4.9-1CC, as described above, would reduce this impact to a less than significant level.

Although not anticipated, nearby sensitive receptors could be exposed to pollutant emissions during project construction, resulting in a potentially significant impact. An adverse risk related to public exposure to hazardous materials could result from the, 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 Measures MM 4.9-2KC and MM 4.9-2CC, which regulate the use of herbicides as described below, would reduce such potential impacts on sensitive receptors to less than significant.

Additionally, to further address the potential for the project to create a significant hazard to the public or the environment involving the release of hazardous materials into the environment during construction, Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would be implemented to require that an on-site recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the on-site contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The on-site recycling coordinator would be responsible for ensuring that wastes requiring special disposal are handled according to State, County and other local regulations that are in effect at the time of disposal. The name and phone number of the coordinator would be provided to the Kern County Planning and Natural Resources Department and the California City Community Development Department prior to issuance of building permits. Implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would further reduce impacts related to hazards to less than significant.

Operation

The routine transport, use, and disposal of hazardous materials can result in hazards to the public through the potential for accidental release. Such hazards are typically associated with certain types of land uses, such as chemical manufacturing facilities, industrial processes, waste disposal, and storage and distribution facilities.

Operation of the proposed project is not anticipated to produce hazardous waste. The PV solar modules and inverters would not produce hazardous waste during operation. Each enclosed transformer at the substation would include mineral oil; however, 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 the disposal of such mineral oil disposal would occur in accordance with applicable federal, State, and local laws and regulations.

As discussed above, it has been demonstrated that standard operation of polycrystalline silicon PV solar systems does not result in pollution emissions to air, water, or soil. Polycrystalline silicon panels removed from the project site would be recycled or otherwise disposed of at an appropriate off-site waste disposal facility. Hazardous materials are unlikely to occur during accidental breakage of the polycrystalline silicon PV solar panels. Similarly, fire damage would not result in the release of hazardous materials. The polycrystalline silicon PV solar panels therefore do not pose a hazardous threat to nearby residences in surrounding communities relative to the release of hazardous materials.

CdTe releases are unlikely to occur from accidental breakage of or fires involving PV solar 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 °C. Potential impacts to soil, air, and groundwater quality from broken CdTe PV solar 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 solar 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 solar modules to prolonged fire conditions or to temperatures high enough to

volatilize CdTe, which has a melting point of 1,000 °C. Moreover, even if a desert wildfire could reach that temperature, the actual CdTe emissions from a PV solar module would be insignificant (~0.04 percent) due to encapsulation in the molten glass matrix (Sinha et al. 2012).

Potential CdTe emissions from broken PV solar modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV solar 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 solar 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 solar module into the environment, and CdTe has a low solubility in water.

The CdTe PV solar modules do not pose a threat to nearby residences. The use of CdTe PV solar modules at the project site would not result in human or aquatic exposure of cadmium. A 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 solar 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 on-site workers or off-site residents.

Operational environmental risks for both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, concluding that they do not present a health risk in the event of exceptional accidents such as fire or breakage, with regards to their use of lead and cadmium compounds, respectively (Sinha et al. 2018, 2019).

In addition, hazardous materials associated with the energy storage facility (i.e., batteries) would be contained in conformance with specifications that follow applicable federal, State, and local requirements. Adherence to OSHA requirements for the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies would further reduce the potential for significant hazard to the public or the environment.

Routine removal and/or maintenance of on-site vegetation may require the use of pesticides and herbicides during project operation. If not handled properly, use of these products could create a hazard to the public (maintenance workers, on-site employees, and/or nearby residents), resulting in a potentially significant impact. Implementation of Mitigation Measures MM 4.9-2KC and MM 4.9-2CC would reduce impacts related to the use of pesticides and herbicides to a less-than-significant level.

The project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is SR 14, which is located approximately one mile west of the project site. 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.

Overall, adherence to local, State, and federal regulations as well as standard protocols during the storage, transportation, and usage of any hazardous materials during project operation, combined with implementation of Mitigation Measures MM 4.9-2KC and MM 4.9-2CC, would reduce potential impacts to less than significant.

Decommissioning

The decommissioning process is described under Impact 4.9-1, above. The majority of materials from the PV solar panels would be recycled to the extent feasible, requiring minimal disposal of solid waste in local landfills, consistent with applicable regulations. Based on current manufacturing conditions, CdTe PV solar modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, and therefore would not pose a significant risk for cadmium leaching if they were disposed of in a landfill. Additionally, batteries within the proposed on-site energy storage facility would also be recycled to the extent feasible, thereby requiring minimal disposal of related wastes in local landfills. However, as such activities may create a significant hazard to the public from the release of hazardous materials into the environment, a significant impact may occur.

Implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would require that an on-site recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the on-site contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The on-site recycling coordinator would also be responsible for ensuring that wastes requiring special disposal are handled in accordance with applicable State and County regulations in effect at the time of disposal. The name and phone number of the coordinator would also be required to be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. Implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would reduce impacts related to hazards in this regard to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.9-1KC and MM 4.16-1KC (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

- MM 4.9-2KC:** During project construction and operation, the project proponent/operator shall continuously comply with the following:
- a. The construction contractor or project personnel shall use herbicides that are approved 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.
 - b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
 - c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.

- d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.
- e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.
- f. A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department.

City of California City

Implement Mitigation Measures MM 4.9-1CC and MM 4.16-1CC, (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

- MM 4.9-2CC:** During project construction and operation, the project proponent/operator shall continuously comply with the following:
- a. The construction contractor or project personnel shall use herbicides that are approved 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.
 - b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
 - c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.
 - d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.
 - e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.
 - f. A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the California City Community Development Department.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.9-1KC, MM 4.9-2KC, and MM 4.16-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.9-1CC, MM 4.9-2CC, and MM 4.16-1CC, impacts would be less than significant.

Impact 4.9-3: The project would result in a safety hazard for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Compatibility Plan.

Solar Facility

The project site is located immediately north of the California City Municipal Airport. As shown in Figure 3-6, *ALUCP in Relation to the Project Site*, the southernmost portion of the PV solar is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14).

According to Table 2A – Compatibility Criteria of the Kern County ALUCP, Compatibility Zone B1 is subject to substantial risk and substantial noise, and Compatibility Zone C is subject to limited risk and frequent noise intrusion. Therefore, the proposed project has the potential to result in a safety hazard or excessive noise for people working in the project area.

As stated in Chapter 3, *Project Description*, the solar panels could extend up to 20 feet in height, depending on the mounting system used and on County building codes. In addition, the project proposes an on-site substation and energy storage system. Substations typically include a small control building (roughly 500 square feet) standing approximately 10 feet tall. The energy storage system modules, which could include commercially available lithium or flow batteries, typically consist of standard International Organization for Standardization containers (approximately 40 feet in length by 8 feet in width by 8 feet in height) housed in pad- or post-mounted, stackable metal structures, but may also be housed in a dedicated building(s) in compliance with applicable regulations. The maximum height of a dedicated structure is not expected to exceed 25 feet. The proposed project would be required to comply with the County’s ALUCP and applicable FAA regulations regarding project approval to ensure that there is no conflict with airport operations and no safety hazards are presented.

Section 1.7.1 of the ALUCP requires that, prior to approval of any type of land use development, findings shall be made that such development is compatible with training and operational missions of relevant military operations. Section 4.17.3 of the ALUCP requires the notification of construction of the project to Edwards Air Force Base. Therefore, notification requirements would also apply for Edwards Air Force Base to ensure no conflict would occur with their operations. Adherence to project notification requirements would reduce project impacts relative to conflict with the ALUCP to less than significant.

Furthermore, the project would not result in an increase in air traffic levels or a change in location of air traffic patterns that would result in a substantial safety risk, as air traffic patterns would not be affected. As previously discussed, and further detailed in Section 4.1, *Aesthetics*, the proposed solar panels would be composed of anti-reflective material. To ensure that potential glare effects from the project remain less than significant, Mitigation Measures MM 4.1-6KC and MM 4.1-6CC would be implemented, which would require the project proponent to demonstrate the solar panels and hardware are designed to minimize glare. Additionally, to further reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-7KC and MM 4.1-7CC, which require the use of non-reflective materials when feasible for on-site structures (O&M building, energy storage structures, etc.). Therefore, glare resulting from the project is not expected to be a concern for pilots operating within the vicinity of the project site.

For the reasons described above, the project would not result in safety or operational hazards to aircraft that would represent a safety hazard to people residing or working in the area. In addition, the nature of operation of solar facilities is not known to result in operational issues for aircraft that would result in a public safety hazard.

Implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County by requiring the developer to coordinate with the Department of Defense and to obtain approval from FAA and public airports and military installations in the area. Implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would reduce impacts to a less-than-significant level.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.1-6KC and MM 4.1-7KC (see Section 4.1, *Aesthetics*, for full mitigation measure text).

- MM 4.9-3KC:** Prior to issuance of building and grading permits for portions of the project that meet the Federal Aviation Administration's noticing requirements, the project proponent/operator shall comply with the following:
- a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17.
 - b. Obtain a Federal Aviation Administration issued "Determination of No Hazard to Air Navigation." This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 19.08.160 that all project components in the flight area would create no significant military mission impacts.
 - c. Provide documentation to the Kern County Planning and Natural Resources Department demonstrating that a copy of the final site plan has been provided to the operators of California City Municipal Airport.

City of California City

Implement Mitigation Measures MM 4.1-6CC and MM 4.1-7CC (see Section 4.1, *Aesthetics*, for full mitigation measure text).

MM 4.9-3CC: Prior to issuance of building and grading permits for portions of the project that meet the Federal Aviation Administration's noticing requirements, the project proponent/operator shall comply with the following:

- a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17.
- b. Obtain a Federal Aviation Administration issued "Determination of No Hazard to Air Navigation." This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 19.08.160 that all project components in the flight area would create no significant military mission impacts.
- c. Provide documentation to the California City Community Development Department demonstrating that a copy of the final site plan has been provided to the operators of California City Municipal Airport.

Level of Significance after Mitigation**Kern County**

With implementation of Mitigation Measures MM 4.1-6KC and MM 4.1-7KC (see Section 4.1, *Aesthetics*, for full mitigation measure text), and Mitigation Measure MM 4.9-3KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.1-6CC and MM 4.1-7CC (see Section 4.1, *Aesthetics*, for full mitigation measure text), and Mitigation Measure MM 4.9-3CC, impacts would be less than significant.

Impact 4.9-4: The project would impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan.

Solar Facility

As discussed in the NOP/IS (Appendix A of this EIR), the proposed project would not physically impede an existing emergency response plan, emergency vehicle access, or personnel access to the project site. The project site is located in an area with several alternative roadways allowing access in the event of an emergency. As required by routine and standard construction specifications administered by Kern County, access would be maintained throughout the construction, operation, and decommissioning phases and appropriate detours would be provided in the event of potential road closures.

The limited size of the project's operational work force would not generate significant traffic volumes during an emergency evacuation scenario that could complicate area-wide emergency evacuation efforts. Driveways built to connect to existing local roads for direct site access would not affect designated emergency evacuation routes, as these are small local streets, and the driveways would not conflict with potential evacuation routes for surrounding land uses. Proposed amendments to the County General Plan Circulation Element to remove section and mid-section line road reservations would not affect any existing roadways or planned evacuation routes.

Therefore, the project would not impair the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan. Therefore, no mitigation measures are required and impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.9-5: The project would expose people or structures, either directly or indirectly, 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.

Solar Facility

Refer also to **Section 4.17, *Wildfire***, for additional discussion. According to the Fire Hazard Severity Zone Map for Kern County prepared by CalFire, the project site is not located in or near State Responsibility Areas or lands classified as high or very high hazard severity zones (CalFire 2007a); refer to Figure 4.17-1, *State Responsibility Areas*. According to the CalFire, Kern County Fire Hazards Severity Zone Maps for the Local Responsible Areas, the project site is classified as LRA Moderate (CalFire 2007b); refer to Figure 4.17-2, *LRA Responsibility Areas*. 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.

The site supports relatively sparse vegetation on-site and site preparation would involve the removal of additional vegetation, although natural vegetation may be maintained if it does not interfere with project

construction, operation, or decommissioning or the health and safety of on-site personnel. The proposed project includes a battery storage component (energy storage system – ESS) which, while such elements generally burn with difficulty, can burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Dry chemical, carbon dioxide (CO₂), and foam are the preferred methods for extinguishing a fire involving batteries, as water is not effective in battery fires. Class D extinguishers are used for lithium-metal fires only. To further increase safety, the battery units are typically low voltage, encased in a steel enclosure, and distanced from combustible materials. They generally incorporate a thermal management system that includes coolant pumps, fans, and a refrigerant system to further maintain cool temperatures within the unit.

Common sources of fires within the desert environment are most often lightning strikes or vehicle exhausts. With regard to the proposed project, there is the potential for lightning to hit the collection system or energy storage facility, potentially causing a wildfire. The use of vehicles during project construction, operation, and/or decommissioning may also increase fire risk due to the driving of heated mufflers and possibly scraping of loose metal pieces over vegetated areas, which could cause a spark. Such conditions may result in a slight increase in the risk of wildfire ignition.

As discussed further in Section 4.13, *Public Services*, of this EIR, the project proponent would implement Mitigation Measures MM 4.13-1KC and MM 4.13-1CC which would require the preparation and submittal of a Fire Safety Plan to the Kern County Fire Department and California City Fire Department for review and approval. The purpose of the Fire Safety Plan is to eliminate causes of fire, prevent loss of life and property by fire, comply with County and County Fire Protection District standards for solar facilities, and comply with the OSHA standard of fire prevention, 29 CFR 1910.39. The plan would require that project construction and maintenance personnel be trained and equipped to extinguish small fires on-site, thus reducing the potential risk of damage from and/or spread of wildfire. The fire safety plan would also address fire hazards of the various project components, including the energy storage system, and would include best management practices (BMP) to reduce the potential for fire and for extinguishment techniques if a fire were to occur.

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 Kern County and California City 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 are not anticipated to significantly increase the risk of wildfire, Mitigation Measures MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *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 Measures MM 4.13-1KC and MM 4.13-1CC 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 in this regard would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.13-1KC (refer to Section 4.13, *Public Services*, for full mitigation measure text).

City of California City

Implement Mitigation Measure MM 4.13-1CC (refer to Section 4.13, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.13-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.13-1CC, 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 facilities, are proposed throughout Kern County. Similar to the project, many are located in the Fremont Valley and Mojave Desert. As shown in Table 3-3, *Cumulative Project List*, approximately 14 solar energy and non-solar projects are proposed within a 6-mile radius of the project site. The geographic scope of impacts associated with hazardous materials generally encompasses the project site and a 0.25-mile radius area around the project sites. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Similar to other potential impacts, such as those related to geology and soils, risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to on-site existing hazardous conditions and/or hazards caused by a project's construction or operation. A geographic scope of a 0.25-mile radius also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact on an existing or proposed school, as discussed above. The Eland Solar Project is located within 0.25 mile of the project site.

Impacts regarding the handling, use, and/or storage of hazardous materials would be project-specific and would therefore not be anticipated to contribute to a cumulative impact. An accident involving a hazardous material release during project construction, operation, or decommissioning through upset or accident conditions including site grading or excavation, or 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 local and State regulations, as well as project safety design features and the implementation of Mitigation Measures MM 4.9-1KC, MM 4.9-1CC, MM 4.9-2KC, MM 4.9-2CC, MM

4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text) would further reduce the project's potential to contribute to a significant cumulative impact. In addition, implementation of appropriate standard safety measures during project construction, operation, and decommissioning, 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, it is not anticipated that the project would contribute to a significant cumulative impact. Therefore, project-level impacts would not be cumulatively significant.

Hazardous materials typically used during construction, operation and decommissioning and removal activities would be 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, County and other local regulations, as well as implementation of Mitigation Measures MM 4.9-1KC, MM 4.9-1CC, MM 4.9-2KC, MM 4.9-2CC, MM 4.13-1KC, MM 4.13-1CC (implementation of a Fire Safety Plan; see Section 4.13, *Public Services*, for full mitigation measure text), and MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text), would further reduce the potential for the project to contribute to cumulative impacts. In addition, implementation of appropriate safety measures during construction, operation, and decommissioning of the project, as well as other cumulative projects, would reduce impacts to a level that would not contribute to cumulative effects. Therefore, impacts related to the use of hazardous materials would not be cumulatively significant.

As discussed above, the fuels and lubricants used on field equipment would be subject to the County's requirement for preparation of a Material Disposal and Solid Waste Management Plan and SPCC plan, as well as other measures to limit potential releases of hazardous materials and wastes. Liquids and oils in the transformers and other equipment would be used in accordance with applicable regulations. The disposal of oils, lubricants, and/or spent filters would occur in conformance with applicable regulations including the requirements of licensed receiving facilities. Overall, the relatively limited use of hazardous materials and subsequent 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. The project's contribution to a significant cumulative impact in this regard would be less than significant.

Additionally, as noted, no RECs have been identified relative to the project site, and no mitigation measures are required in this regard (Stantec 2019b). All cumulative projects identified would similarly be evaluated for the presence of documented hazardous sites, either on-site or off-site, having the potential to create a significant hazard to the public or the environment. As such, it is not anticipated that the project would result in a significant cumulative impact in this regard, as such conditions would be more site-specific and would be reduced to less than significant with mitigation, as feasible. The project's cumulative impacts in this regard are considered less than significant.

A portion of the project site is located within Compatibility Zone B1 and Zone C of the California City Municipal Airport. The proposed project would be required to comply with the County's ALUCP and applicable FAA regulations regarding project approval to ensure that there is no conflict with airport operations and no safety hazards are presented. Other cumulative projects located within the same ALUCP would be similarly required to conform to similar requirements, as applicable, to reduce the potential for

hazards relative to airport operations. Additionally, implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would ensure the project would be consistent with the ALUCP and General Plan policies of Kern County and the City of California City by requiring the developer coordinate with the Department of Defense, FAA, public airports, and military installations in the area. Thus, the project would not combine with other projects to contribute to a significant cumulative impact in this regard and there would be less-than-significant cumulative impacts associated with airports.

As stated above, the PV solar facility is not anticipated to impair implementation of, or physically interfere with, an adopted response plan or emergency evacuation plan. Access on local roadways would be maintained at all times during project construction, operation, and decommissioning, and the project as designed would not remove or restrict emergency access in the short or long term. Other cumulative projects would be evaluated on a project-specific basis for their potential to affect local roadways and/or emergency routes in the area and would be required to provide measures to avoid or minimize any potential adverse effects, consistent with State and local regulations that may apply. 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 impairment or interference with an adopted emergency response plan or emergency evacuation plan. Cumulative impacts in this regard are considered to be significant and unavoidable.

Due to the nature of the proposed utility improvements, the project would have the potential to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. While the PV solar facility is not anticipated to significantly increase the risk of wildfire, Mitigation Measures MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*, for full mitigation measure text) would be implemented to require development and implementation of a Fire Safety Plan for project construction, operation, and decommissioning activities. Similarly, other cumulative projects would be evaluated for their specific location pertaining to wildfire risk, in addition to project characteristics and/or operations that may increase the risk of wildfire events or resulting damage. All cumulative projects, similar to the proposed project, would be subject to State and local regulations intended to avoid or minimize the risk of wildfire occurrence, and mitigation measures would be incorporated as needed. Although impacts resulting with construction, operation, and decommissioning of the proposed project would be less than significant without mitigation, Mitigation Measure MM 4.13-1KC and MM 4.13-1CC would be implemented to further reduce the potential for the project to contribute to a significant cumulative impact relative to wildfire. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects would have the potential to result in a cumulative impact from the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. As such, the project, in combination with other related projects, could result in a significant and unavoidable cumulative impact in this regard.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.9-1KC through MM 4.9-3KC, MM 4.13-1KC (see Section 4.13, *Public Services*, for full mitigation measure text), and MM 4.16-1KC (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

City of California City

Implement Mitigation Measures MM 4.9-1CC through MM 4.9-3CC, MM 4.13-1CC (see Section 4.13, *Public Services*, for full mitigation measure text), and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*, for full mitigation measure text).

Level of Significance after Mitigation**Kern County**

With implementation of Mitigation Measures MM 4.9-1KC through MM 4.9-3KC, and MM 4.16-1KC, impacts would be less than significant. Cumulative impacts involving wildland fire hazards (Mitigation Measure MM 4.13-1KC) would remain significant and unavoidable.

City of California City

With implementation of Mitigation Measures MM 4.9-1CC through MM 4.9-3CC, and MM 4.16-1CC, impacts would be less than significant. Cumulative impacts involving wildland fire hazards (Mitigation Measure MM 4.13-1CC) would remain significant and unavoidable.

4.10.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to hydrology and water quality for the proposed project. It also describes the impacts associated with hydrology and water quality that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. The information and analysis in this section is largely based on the *Preliminary Hydrology Study for the Kudu Solar Project* prepared by Westwood (Westwood 2019), the *Kudu Solar Preliminary Jurisdictional Aquatic Resources Delineation Report* prepared by Stantec (Stantec 2020d), and the *Kudu Solar Project Water Supply Assessment* prepared by Stantec (Stantec 2020c) located in Appendices I, E, and N of this EIR, respectively.

4.10.2 Environmental Setting

Regional Setting

The project site is located in the northern region of the Mojave Desert Basin (Basin) which is defined by surrounding mountain ranges that help create its generally dry conditions. The Basin contains numerous mountain ranges that create valleys, closed drainage basins, salt pans, and seasonal saline lakes when precipitation is high enough. Most of the valleys are internally drained, resulting in a closed system where all precipitation that falls within the valley does not ever find its way to the ocean. The project site is located in the northern portion of Fremont Valley, a desert region that drains the eastern slopes of the Tehachapi Mountains, as well as the Sierra Nevada, El Paso and Rand Mountains. Within Fremont Valley, surface water generally flows east to Koehn Dry Lake, the lowest point topographically in the enclosed Basin, where surface water either evaporates or percolates into the ground.

Antelope-Fremont Valleys Watershed

The project area is situated in the central portion of the roughly 3,366-square-mile Antelope-Fremont Valleys Watershed (Hydrologic Unit Code: 18090206), within the 909-square-mile Fremont Hydrologic Unit (625.00), and the 719-square-mile Koehn Hydrologic Area (625.40). The Fremont Valley is located along the eastern base of Barren Ridge, which is part of the Tehachapi Mountain range. There is an abrupt change in topography that occurs approximately along the course of the Los Angeles Aqueduct. Over time, erosion has built an alluvial fan from the local drainage sources onto the desert floor. There is a shallow surface water divide between the town of Mojave and the Fremont Valley. Surface drainage south of the divide flows south toward the town of Rosamond, while north of the divide surface, where the project area is located, drainage flows generally northeast through the relatively flat Fremont Valley to the dry Koehn Lake as part of the Koehn Lake/Cache Creek Watershed (Appendix E of this EIR).

The main drainage feature in the watershed is the Cache Creek channel, which is typically dry except during intense precipitation events. Cache Creek is an intermittent stream that flows out of the Tehachapi

Mountains southwest of the project area and turns north to flow approximately 1 mile east of the project area, eventually draining into Koehn Lake (Appendix E of this EIR).

Climate

As described above, the project site is located in the Mojave Desert portion of Kern County, within the Mojave Desert Air Basin (MDAB), which is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. The project area region is considered a high desert environment, with an arid climate that is characterized by strong fluctuations in daily temperatures, hot summer daytime temperatures, and cool winter temperatures. Additionally, the region receives very little precipitation, and evaporation exceeds the mean annual precipitation. Most of the annual precipitation occurs from November through April in the form of rain and snow. Wind is also a strong feature of this climatic regime, with dry winds in excess of 25 miles per hour in the late winter and early spring. During the summer, the MDAB is generally influenced by a pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating.

According to Western Regional Climate Center data records between 1904 and 2016, average annual temperatures in Mojave Station (045756) ranged between 49.9 and 75.8 degrees Fahrenheit, with the warmest temperatures occurring between July and August at a high of 97 degrees Fahrenheit and the coldest temperatures occurring between December and January at a low of 32.9 degrees Fahrenheit. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The Mojave Desert receives an average rainfall of slightly less than 6 inches, with the most rain occurring between January and February (Stantec 2020d). Precipitation data available from the National Oceanic and Atmospheric Administration indicates that average rainfall in the project area during a 100-year storm event is estimated to be 3.71 inches.

Kern County has an average annual temperature of 65.1 degrees Fahrenheit (°F), with an annual average high temperature of 76.8°F and an average annual low temperature of 53.4°F. Average annual rainfall in the county is 6.45 inches, and the County typically has an average of 274 sunny days per year (Project Air Quality and Greenhouse Gas Assessment, Appendix C of this EIR).

Site Hydrology

Surface Hydrology and Drainage

The topography of the project site is relatively flat with a mild slope of 1 percent. However, moderate topographic irregularities and folds are also present. Several previously mapped ephemeral streams occur within the project site, generally flowing to the northeast and draining into Cache Creek and ultimately Koehn Dry Lake, approximately 7 miles northeast of the project site. Elevations on-site range from roughly 2,460 feet above mean sea level (amsl) in the southwestern portion of the project site to approximately 2,180 feet amsl in the northeastern portion of the project site (Appendix E of this EIR).

Floodplains

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs). The project area is located within FEMA FIRM panels 06029C2925E, 06029C2930E, 06029C2920E, and 06029C2940E (see Appendix G-1). According to the FIRMs for the project area,

portions of project Sites 2 and 3, as well as segments along the Site 3 collector lines, are located within a mapped FEMA Zone A 100-year flood area, which is considered a Special Flood Hazard Area. The FEMA Zone A designation denotes areas with a 1 percent annual chance of flooding but do not have a detailed analysis, and therefore do not have determined depths or base flood elevations. As shown in Figure 3-5, *FEMA Map* (see Chapter 3 of this EIR), the portions of Site 2 and Site 3 located within the 100-year flood zone are associated with an unnamed intermittent stream. As also shown on Figure 3-5, *FEMA Map*, the balance of the project site is designated as FEMA Zone X (unshaded), which describes an area of minimal flood hazard. These areas may have ponding and local drainage problems that do not warrant a designation as a base floodplain and are determined to be outside of the 500-year flood zone and protected by levee from 100-year flood.

Soil Types and Erosion

The project area contains four mapped soil units, according to the US Department of Agriculture Soil Conservation Service's Soil Survey of Kern County in 1981. In general, the majority of the project area is underlain by loamy sand and sandy loam. The major soil type in the project area is 114 Cajon Loamy Sand with 0 to 5 percent slopes, which underlies the central and northern portions of the project site. Other soil types in the project area include 116 Cajon Gravelly Loamy Sand with 0 to 9 percent slopes in the western portion of the project area, and 137 Garlock Loamy Sand, 2 to 9 percent slopes, and 154 Neuralia Sandy Loam, 2 to 5 percent slopes, in the southeastern portions of the site.

According to the *CEQA Level Geotechnical Study* prepared for the project by Stantec Consulting Services, Inc. (Stantec 2019a), provided as Appendix G-1 of this EIR, the predominantly coarse-grained soils underlying the project area are potentially susceptible to erosion or the loss of topsoil due to surface water flows. See also **Section 4.7.2, *Geology and Soils***, for more information on soil erosion potential.

Groundwater Resources

Regional and Local Groundwater

The project site is located within the Fremont Valley Groundwater Basin (FVGB), which is located in eastern Kern County and northwestern San Bernardino County. As defined by the California Department of Water Resources (DWR), the FVGB (Basin No. 6-46) encompasses an area of approximately 523 square miles (roughly 335,000 acres) including the Fremont Valley, the northeastern part of the Antelope Valley, and the Tehachapi, El Paso, and Rand Mountains (Regional Water Management Group 2018). The basin is bounded to the northwest by the Garlock fault zone and to the east by crystalline rock formations. The Antelope Valley Groundwater Basin bounds the FVGB to the southwest along a groundwater divide. Quaternary alluvium and lacustrine deposits are the most important water-bearing materials in the basin. Alluvium ranges in thickness along the margin of the basin and thins toward the middle of the basin near Koehn Lake. Groundwater in the alluvium is generally unconfined. The total storage capacity of the basin is calculated to be 4,800,000 acre-feet (AF). Groundwater data from a production well on the eastern end of the project indicates that the depth to groundwater is approximately 255 feet below the ground surface (DWR 2010).

Natural recharge of the basin includes percolation of ephemeral streams that flow in from the Sierra Nevada. The general groundwater flow direction is toward Koehn Lake at the center of the valley, with no

appreciable quantity of groundwater flowing out of the basin (DWR 2004). Average annual well pumping was approximately 32,000 AF during the 1950s through the early 1960s.

The FVGB is not an adjudicated basin. Rights to the groundwater supply are not under legal restrictions. DWR has not identified the FVGB as being in or projected to be in an overdraft condition (DWR 2004). According to the California Statewide Groundwater Elevation Monitoring Program, which is tasked with monitoring, reporting, and prioritizing groundwater basin conditions, as part of the Sustainable Groundwater Management Act (SGMA), the FVGB is designated as a “low priority” groundwater basin, and as a result is not required to have a groundwater sustainability plan in accordance with the SGMA. DWR defines a low-priority basin as one that uses less than or equal to 2,000 AF of groundwater per year (DWR 2020). Because of the low-priority status, the FVGB is not subject to SGMA requirements. Furthermore, as the basin is not adjudicated, management is assumed by Kern County.

Seiche, Tsunami, and Mudflow

A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides, or volcanic activity. A seiche is a standing wave in an oscillating body of water. The project site is located over 100 miles east of the Pacific Ocean and there are no enclosed bodies of water within the project vicinity; therefore, the risk for tsunami or seiche in the project area is very low.

Mudflows describe a mass-movement landform and process characterized by a flowing mass of fine grained earth material with a high degree of fluidity. The project area is relatively flat and has a low potential to be inundated by mudflow.

4.10.3 Regulatory Setting

Federal

Clean Water Act

The federal Clean Water Act (CWA) is the primary surface water protection legislation throughout the country. By employing a variety of regulatory and non-regulatory tools, including establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff, the CWA aims to restore and maintain the chemical, physical, and biological integrity of surface waters to support “the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.” The CWA regulates both the pollutant content of point-source discharges, as well as addressing polluted runoff (nonpoint sources).

CWA Section 404 requires that any project within waters of the United States have a permit for the discharging into such waters. CWA Section 401 requires that any discharge into navigable water must provide certification to the local Regional Water Quality Control Board (RWQCB) proving that such discharge complies with the applicable provisions of the CWA.

Section 401, Water Quality Certification. Section 401 of the CWA requires that, prior to issuance of any federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into waters of the U.S., must be certified by

the state, as administered by the RWQCB. This certification ensures that the proposed activity does not violate state and/or federal water quality standards.

Section 402, National Pollutant Discharge Elimination System. Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES Construction General 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:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

NPDES regulations are administered by the Lahontan RWQCB at the project site.

Section 404, Discharge of Dredged or Fill Materials. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the U.S., including wetlands. For purposes of Section 404 of the CWA, the limits of non-tidal waters extend to the ordinary high water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When an application for a Section 404 permit is made, the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A water quality certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for water quality certification (or waiver thereof) from the Lahontan RWQCB. Project activities would adhere to state and federal water quality standards and would be in compliance with Sections 401 and 404 of the CWA.

Section 303, Water Quality Standards and Implementation Plans. Section 303(d) of the CWA (33 U.S. Code 1250, et seq., at 1313(d)) requires states to identify “impaired” water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the U.S. Environmental Protection Agency for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of total maximum daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Program

The FEMA National Flood Insurance Program includes a flood hazard mapping program, in which FEMA identifies flood hazards and assesses flood risks. Under this program, FEMA produces FIRMs which delineates flood risk areas and risk levels. Areas identified as at risk for flooding on the FIRMs are referred to as Special Flood Hazard Areas, which are those areas at risk of the 100-year flood (1 percent annual chance of flooding). It also delineates areas that are in moderate flood hazard areas, or those areas between a 0.2 percent annual chance of flooding (500-year flood) and 1.0 percent chance of flooding (a Special Flood Hazard Area). Special Flood Hazard Areas are further divided into zones, which provide information on the degree of flooding within the risk area, including average depth of flooding.

State

Department of Water Resources

The major responsibilities of the California Department of Water Resources (DWR) include preparing and updating the California Water Plan to guide development and management of the state's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations, supports watershed and river restoration programs, encourages water conservation, explores conjunctive use of ground and surface water, facilitates voluntary water transfers, and, when needed, operates a state drought water bank.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, also referred to as Porter-Cologne, is contained in the California Water Code, Division 7, Section 13000 et seq. It is the principal law governing water quality regulation in California. It is the policy of the state, as set forth in Porter-Cologne, that the quality of all the waters of the state shall be protected, that all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and that the state must be prepared to exercise its full power and jurisdiction to protect the quality of water in the state from degradation. Porter-Cologne directs the State Water Resources Control Board (SWRCB) to formulate and adopt state policies for controlling water quality and designates the SWRCB as the state water pollution control agency for all purposes stated in the CWA. Porter-Cologne establishes the policies that are to be implemented and authorities that are to be used in achieving the goals of the CWA.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every three years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a report of waste discharge. Absent a potential effect on the quality of

“waters of the State,” no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Lahontan Region Water Quality Control Plan (Basin Plan) (Lahontan RWQCB 2015).

Regional Water Quality Control Boards

California’s RWQCBs are established by the SWRCB via Porter-Cologne. The Lahontan RWQCB would review the project in accordance with the CWA. The Basin Plan sets the water quality standards for the basin, identifies water quality problems and control measures, and identifies monitoring activities for waste discharge requirements. The RWQCB would review the Stormwater Pollution Prevention Plan (SWPPP) and issue a Waste Discharge Identification Number for the project.

NPDES Permit for MS4

The Central Valley Region of the RWQCB Water Quality Order No. R5-2016-0040 (NPDES General Permit NO. CAS0085324) Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4s) is the MS4 permit applicable to Kern County. It regulates any discharges from stormwater and other authorized waters from municipal separate stormwater systems. This is a single region-wide permit that replaces the previous Phase I and Phase II MS4 permits. The region-wide permit advocates for greater protection for water quality, program implementation efficiencies, and watershed coordination. Discharges from the MS4 may not cause or threaten to cause pollution, contamination, or nuisance as defined by Water Code Section 13050. Discharges from MS4s may not violate any applicable prohibition in the Basin Plan. Pollution control measures are required for certain non-stormwater discharges that are discharged through the MS4, including but not limited to the following sources that may apply to the proposed project: water line flushing, diverted stream flows, rising groundwater, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, flows from riparian habitats and wetlands, and incidental runoff from landscaped areas.

The MS4 permit also requires development of a Post Construction Stormwater Management Program, which includes site design measures, source control measures, and low-impact development (LID) design standards. For projects that create or replace between 2,500 and 5,000 square feet of impervious surface, one or more of the following site design measures are required: stream setbacks and buffers, soil quality improvements, tree planting and preservation, rooftop and impervious surface area disconnection, porous pavement, green roofs, vegetated swales, and rain barrels and cisterns.

NPDES Stormwater Construction General Permit

As the proposed project would disturb an area greater than one (1) acre in size, the project proponent would be required to obtain a NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-009-DWQ. The permit regulates stormwater runoff due to construction activities. Construction activities include any construction or demolition activity that causes more than one (1) acre of land disturbance. A SWPPP must be developed in accordance with Part 7 of the Construction General Permit. The SWPPP describes best management practices (BMPs) that would be implemented to comply with the permit requirements.

California Fish and Game Code – Section 1602

Section 1602 of the California Fish and Game Code requires that the California Department of Fish and Wildlife (CDFW) be notified of all proposed activity that may cause any changes to rivers, lakes, or streams. Once notified, CDFW would evaluate the proposed project and determine if a Lake and Streambed Alteration Agreement is required. If needed, this agreement would enforce conditions on the proposed project. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

During final engineering and design of a project, if it is determined that any project-related actions would have the potential to necessitate a streambed alteration agreement, such an agreement would be prepared and implemented prior to construction, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A streambed alteration agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final lake or streambed alteration agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft lake or streambed alteration agreement, thereby making it final.

Sustainable Groundwater Management Act

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act into law. The SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge.

The California Statewide Groundwater Elevation Model Priority List ranks groundwater basins across the state with assessment rankings of high, medium, low, or very low. In unmanaged groundwater basins, the SGMA requires the formation of locally controlled groundwater sustainability agencies (GSA). GSAs are responsible for developing and implementing groundwater sustainability plans to guide groundwater management decisions and ensure long-term sustainability in their basins. In adjudicated basins, the court-identified Watermaster serves the purpose of the GSA, and the adjudication judgment serves as the groundwater sustainability plan.

The FVGB has been designated as a “low” priority groundwater basin by the DWR, and a groundwater sustainability plan is not required under the SGMA. Management of this basin is assumed by Kern County.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to hydrology and water quality name. The policies and implementation measures in the Kern County General Plan related to hydrology and water quality that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. 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 2: In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinance and programs. The ordinances will establish conditions, criteria and standards for the approval of development in hazard areas.
- Policy 3: Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.
- 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 Code 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.

1.9 Resources**Policies**

- 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.

1.10.6 Surface Water and Groundwater**Policies**

- Policy 33: Water related infrastructure shall be provided in an efficient and cost effective manner.
- Policy 34: Ensure that water quality standards are met for existing users and future development.
- 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.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

The goals, policies, and implementation measures in the California City General Plan for hydrology and water resources applicable to the proposed project are provided below. Goals, policies, and implementation measures in the California City General Plan that are not specific to the proposed project are not listed below.

5.15 Open Space and Conservation Element

Goals

- Ensure an adequate water supply for existing residents and business and planned growth and development.
- Protect groundwater quality.

Policies

- Protect the community's environmental setting from deterioration, compromising the quality of life enjoyed by the existing and future residents.
- Provide sufficient water to meet the existing and projected needs of the community, while emphasizing conservation goals.
- Continue to promote and encourage water conservation to residents and businesses in the community.
- Establish a water conservation program encouraging and promoting xeriscaping and municipal recycled water usage.
- Groundwater quality shall be maintained to allow local resources to meet local needs.
- Require support of regional efforts by the Lahontan Regional Water Quality Control Board to improve and protect water quality. Compliance with the measures contained in the California Water Code and other requirements shall be required.
- New development proposals shall implement Best Management Practices (BMP's) under the National Pollution Discharge Elimination System (NPDES) permit. These practices are designed to reduce pollution runoff during construction of new projects and rehabilitation projects.

Implementation Measures

Measure C-3: The City shall implement the following measures to address water quality goals and policies in the General Plan Planning Area:

- Work with local, regional, and State agencies to provide or a cost-effective and equitable means of reducing urban runoff and addressing water quality. If required, continue to use National Pollutant Discharge and Elimination System (NPDES) permits, including Best Management Practices (BMPs) for new development projects to help reduce runoff. Examples of BMPs include: schedule excavation and grading work for dry weather, covering stockpiles and excavated soil with tarps or plastic

sheeting, sweeping dry spilled materials immediately, and never hosing down dirty pavement or impermeable surfaces where fluids have spilled.

- Require new development proposals to provide evidence of how urban runoff will be reduced and water quality will be addressed prior to issuance of grading and/or building permits.
- Require new development proposals to comply with City Resolution No. 08-01-1941 related to the suitability of new development to occur with a proposed use of a septic system.
- Require new development proposals with a proposed septic system to conduct a soils analysis to determine if the soils are suitable for such systems.

Kern County Floodplain Management Ordinance

Kern County Municipal Code Section 17.48 promotes the health, safety, and welfare of the public by minimizing flood losses in specific areas. The ordinance requires restricting or prohibiting uses that are dangerous or cause drastic increases in erosion or flood heights or velocities. It also requires that any uses that are vulnerable to flooding shall be protected against flood damage during construction. The ordinance controls the alteration of any floodplains or water bodies that help channel flood waters. It also controls filling, grading, dredging, and other development that may result in increased flood damage as well as regulating the constructing of flood barriers that would unnaturally divert flood waters and cause flood hazards in other areas. As part of the project area sits in a floodplain within the unincorporated areas of Kern County, the project must comply with this ordinance.

Kern County Grading Code

Chapter 17.28 of the Kern County Municipal Code is referred to the Kern County Grading Code. Grading and other construction activities within Kern County must comply with the provisions of the Grading Code. 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.

A grading permit is required prior to commencement of grading activities within Kern County. Obtaining a grading permit from Kern County requires submittal of an application, which must include plans and specifications including but not limited to construction and material requirements, a soils engineering report, an engineering geology report, and engineering calculations and drainage computations. Plans must include information of the existing ground and details of terrain and area drainage, proposed elevations and grading, surface and subsurface drainages that would be constructed as part of the project. Recommendations in the soils engineering report and the engineering geology report must be incorporated into plans and specifications.

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.

Division Four of the Kern County Development Standards include Standards for Drainage. Chapter XII, Natural Channels, requires that all natural channels are identified and clearly delineated on site plans with their appropriate floodplain designations. For natural channels with side slopes steeper than 2:1, a setback measures from the toe of the slope must be a 2:1 slope plus a 10-foot-wide buffer strip. For natural channels with slide slopes flatter than 2:1, the required setback must be a minimum of 10 feet from the floodway limit.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Public Works Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Project proponents must apply for the permit under one of the following four conditions:

1. All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All storm water runoff is not retained on site but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All storm water runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control

Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.

4. Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County – 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 one or more acres, and requires the project proponent to provide information about construction activities and to identify whether stormwater runoff has the potential of discharging into waters of the United States, waters of the State, or a terminal drainage facility. The purpose of the form is to identify which water quality protection measure requirements apply to different projects (if any). Should stormwater runoff be contained on-site and not discharge 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, development of a SWPPP and BMPs would be required.

Kern County Water Well Permitting

Kern County requires the submittal of an application to construct, reconstruct/modify, deepen, or destroy any water wells within the County's jurisdiction. For new wells, the application requires the disclosure of various details including but not limited to the well's location, depth, diameter, sealing material, as well as the depth to groundwater at that location. A water sample must also be taken at the proposed well location. Any work related to water well construction cannot legally occur prior to approval of the well site from Kern County. Approval of water quality and final construction features is required before the water well is put to use.

4.10.4 Impacts and Mitigation Measures

Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the proposed project based on changes to the environmental setting as described above, identified drainage conditions in the project site, and the current regulatory framework. The proposed project's potential hydrology and water quality impacts have been evaluated using the *Preliminary Hydrology Study for the Kudu Solar Project* located in Appendix I of this EIR. 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

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 effect on hydrology and water quality.

A project could have a significant adverse effect on hydrology and water quality if it would:

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - i. Result in substantial erosion or siltation on- or off-site;
 - ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv. Impede or redirect flood flows.
- 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.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to hydrology and water quality, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.

Construction

The project site is relatively flat. Project construction would involve minimal grading in areas to further flatten the site for facility installation. Earth-moving activities are expected to be limited to activities such as construction of the access roads, operations and maintenance (O&M) buildings, substations, water storage tanks, solar panel foundation supports, and energy storage facilities. Project grading would be minimized to the extent feasible to reduce unnecessary soil movement that may result in dust generation. Earthworks scrapers, excavators, dozers, water trucks, paddywheels, 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. Any grading would be balanced on-site, with no need for the export or import of soils. Additionally, on-site trenching for the placement of underground electrical and communication lines would occur.

Excavation would be required to install certain project facilities, including but not limited to substations and O&M buildings. Grading and excavation would disturb soil, which has the potential to result in sedimentation of stormwater and subsequent degradation of stormwater quality. Further, any construction activity that results in the accidental release of pollutants or hazardous or potentially hazardous materials could degrade stormwater quality. Materials that could contribute to this impact include, but are not limited to, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids utilized by construction and maintenance vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error. If, at some future time, the project should be decommissioned and solar facilities removed, there could be impacts involving stormwater runoff and water quality; however, those impacts would be similar to and not more extensive than initial construction impacts. A discussion regarding the handling and storage of hazardous materials during project construction is available in Section 4.9, *Hazards and Hazardous Materials*, of this EIR.

The project would result in a minor increase in impervious surfaces on the site from development; however, impervious surfaces would be limited to equipment foundations (footings and piles), as well as the O&M buildings, substations, transformers, inverter pads, and energy storage facilities. The access roads would not be paved. The improved roads would be constructed of compacted earthen or gravel materials that are pervious. Further, the photovoltaic panels would be installed on impervious footings which would be surrounded by pervious materials, such as gravel. The panels are not considered impervious surfaces because stormwater falling on the panels would run off and infiltrate into the ground below or run off during larger storm events into constructed drainage basins. The project site would be graded such that water would not pond around the photovoltaic panel footings. Therefore, the project would leave large areas of pervious surfaces that would absorb stormwater runoff and would not result in a significant reduction of groundwater infiltration rates associated with precipitation.

To avoid impacts to water quality, the Kern County Public Works Department requires the completion of an NPDES applicability form for projects with construction activities that would disturb one or more acre within Kern County. Because stormwater runoff does not discharge to waters of the United States (lack of hydrologic connectivity to other traditionally navigable waters), acquisition of coverage under the State Construction General Permit for stormwater is not required. However, because the project would disturb more than one (1) acre of ground surface and stormwater would not be contained on-site or discharge into a terminal drainage facility, the project proponent would be required to prepare and implement a SWPPP for the project.

As required by Mitigation Measures MM 4.10-1KC and MM 4.10-1CC, below, the proposed project would implement a SWPPP that would include erosion control and sediment control BMPs designed to prevent soil erosion from occurring and to retain loose sediment on-site, thereby preventing runoff of water pollutants during project construction and ground disturbance. Project-specific BMPs would be identified in the SWPPP prepared pursuant to Mitigation Measures MM 4.10-1KC and MM 4.10-1CC and may include the following:

- Minimizing removal of project site vegetation;
- Implementing sediment controls, such as installing silt fences and stabilizing disturbed areas, as necessary;
- Covering stockpiled soils to prevent wind erosion;
- Properly managing construction materials, waste, and soil stockpiles; and
- Preventing runoff from areas used for fueling and maintenance of equipment and vehicles.

In addition, the project must comply with the Kern County Grading Ordinance and California City Grading Ordinance, which require implementation of dust control during all grading operations and the use of temporary drainage and erosion control measures on-site as needed. Furthermore, Mitigation Measure MM 4.10-2KC would require the preparation of a hydrologic study and drainage plan per the Kern County Development Standards and the Kern County Code of Building Regulations prior to issuance of a grading permit. Based on the findings of the hydrologic study, the drainage plan would recommend an on-site design that complies with all channel setback requirements and ensures facilities are located in such a way to lessen their impact on drainage areas and their water quality. Therefore, the concurrent ground disturbance required for construction of these facilities would mostly avoid drainage areas. The following design features may be included in the final storm drainage plan prepared pursuant to Mitigation Measures MM 4.10-2KC and MM 4.10-2CC: a series of on-site stormwater basins; a combination berm/ditch on portions of parcel perimeters to avoid off-site runoff, depending on the drainage pattern; and underground storage of stormwater if feasible. Implementation of Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would reduce proposed project-generated stormwater runoff to pre-project conditions, such that no off-site stormwater control measures would be necessary. Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would require that project-related ground disturbance be minimized within drainage areas and timed to avoid the rainy season where possible. These measures together would decrease the potential of stormwater mixing with construction-related materials and degrading water quality.

Further, as noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, Mitigation Measures MM 4.9-2KC and MM 4.9-2CC would require the project proponent/operator to prepare a Hazardous Materials Business Plan that would delineate hazardous material and hazardous waste storage areas; describe proper

handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. Therefore, potential impacts to stormwater quality from the accidental release of hazardous materials would be less than significant.

Operation

As the project site is currently undeveloped, the project would result in an increase in impervious surfaces on the site as compared with existing conditions. As stated above, the permanent impervious surfaces on the project site are associated with equipment foundations, O&M buildings, substations, inverter pads, and energy storage facilities. The access roads would not be paved. The improved roads would be constructed of compacted earthen or gravel materials that are pervious. The panels are not considered impervious surfaces, as stormwater falling on the panels would run off and either infiltrate into the ground below or run off during larger storm events into constructed drainage basins. The remaining, undeveloped portion of the site would be covered by pervious surfaces, such as gravel.

Operation of the proposed project would require limited use of certain hazardous materials for routine operations and maintenance, such as fuels, paints, coatings, lubricants, and transformer oil. Accidental release of such materials on-site could result in stormwater quality degradation. However, as described above, Mitigation Measures MM 4.9-1KC and MM4.9-1CC would require the 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.

As noted in Chapter 3, *Project Description*, the project may include a water treatment facility to filter out certain chemicals from the groundwater used for solar panel washing. This would create a wastewater stream that may involve on- or off-site disposal subject to approval by the Lahontan RWQCB, to meet their regulatory standards for Waste Discharge Requirements. The project must comply with those standards and this will be further ensured through Mitigation Measures MM 4.10-3KC and MM 4.10-3CC.

Water quality could also be degraded by non-hazardous materials during operation activities. During dry periods, impervious surfaces (i.e., hardscape surfaces such panels and buildings) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can mix with stormwater and degrade water quality. However, as mentioned above, a final hydrologic study and drainage plan would be conducted and submitted to the Kern County Public Works Department prior to the issuance of a grading permit, which would evaluate the changes to hydrology on-site and recommend on-site control measures to minimize potential increases in runoff from the project site and to incorporate measures to prevent sedimentation and soil erosion that could contaminate site runoff (refer to Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, above). For example, retention basins can be designated to manage flow concentration so that erosion and sedimentation are minimized on-site during storm events during project operation. Due to the spacing of the equipment piles and geographic extent of the project parcels, it is not feasible to direct runoff from all of the solar arrays and support structures to a single retention basin. The final drainage plan would include the locations of planned retention basins throughout the site, which would be designed to retain pre-project runoff volumes. Stormwater management measures included in the final drainage plan, prepared pursuant to Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, would prevent the off-site discharge of stormwater carrying non-sediment pollutants.

In summary, adherence to the requirements of the approved final hydrologic study and drainage plan, as required by Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, would minimize operational impacts to water quality. Apart from the minimal runoff resulting from the infrequent cleaning of solar panels that would likely percolate into the ground on-site, no other non-stormwater discharges are expected to occur when the project is operational. With implementation of Mitigation Measures MM 4.9-1KC, MM 4.9-1CC, MM 4.10-2KC, MM 4.10-2CC, MM 4.10-3KC, and MM 4.10-3CC, project operation would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.9-1KC (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text.)

MM 4.10-1KC: Prior to issuance of a grading permit and prior to engagement of decommissioning activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan for review and approval by the Regional Water Quality Control Board—Lahontan Region. The Stormwater Pollution Prevention Plan shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving off-site and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the Stormwater Pollution Prevention Plan may include the following:

- a. Minimization of vegetation removal.
- b. Implementing sediment controls, including silt fences as necessary.
- c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas.
- d. Properly containing and disposing of hazardous materials used for construction on site.
- e. Properly covering stockpiled soils to prevent wind erosion.
- f. Proper protections and containment for fueling and maintenance of equipment and vehicles.
- g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter.
- h. Cleanup of silt and mud on adjacent street due to construction activity.
- i. Checking all lined and unlined ditches after each rainfall.
- j. Restoring all erosion control devices to working order to the satisfaction of the Lahontan Regional Water Quality Control Board after each rainfall run-off.

- k. Installing additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise.

MM 4.10-2KC: Prior to the issuance of a grading permit, the project proponent/operator shall submit a final hydrologic study and drainage plan for review and approval by the Kern County Public Works Department. The final hydrologic study and drainage plan shall be designed to evaluate and minimize potential increases in runoff from the project site. The final hydrologic study and drainage plan shall include but not be limited to the following:

- a. Numerical stormwater model for the project site, which would evaluate existing and proposed (with project) drainage conditions during storm events ranging up to the 100- year event.
- b. Consideration 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. 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 module 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 hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code, Kern County Development Standards, Kern County Hydrology Manual and Kern County Floodplain Ordinance, and approved by the Kern County Public Works Department prior to the issuance of grading permits.

MM 4.10-3KC: Prior to issuance of a building permit for any on-site water treatment facilities, the project proponent/project operator shall provide evidence of compliance with any applicable Waste Discharge Requirements established by the Lahontan Regional Water Quality Control Board to the Kern County Public Works Department – Building and Development.

City of California City

Implement Mitigation Measure MM 4.9-1CC (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text.)

MM 4.10-1CC: Prior to issuance of a grading permit and prior to engagement of decommissioning activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan for review and approval by the Regional Water Quality Control Board—Lahontan Region. The Stormwater Pollution Prevention Plan shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving off-site and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the Stormwater Pollution Prevention Plan may include the following:

- a. Minimization of vegetation removal.
- b. Implementing sediment controls, including silt fences as necessary.
- c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas.
- d. Properly containing and disposing of hazardous materials used for construction on site.
- e. Properly covering stockpiled soils to prevent wind erosion.
- f. Proper protections and containment for fueling and maintenance of equipment and vehicles.
- g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter.
- h. Cleanup of silt and mud on adjacent street due to construction activity.
- i. Checking all lined and unlined ditches after each rainfall.
- j. Restoring all erosion control devices to working order to the satisfaction of the Lahontan Regional Water Quality Control Board after each rainfall run-off.
- k. Installing additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise.

MM 4.10-2CC: Prior to the issuance of a grading permit, the project proponent/operator shall submit a final hydrologic study and drainage plan for review and approval by the California City Public Works Department. The final hydrologic study and drainage plan shall be designed to evaluate and minimize potential increases in runoff from the project site. The final hydrologic study and drainage plan shall include but not be limited to the following:

- a. Numerical stormwater model for the project site, and would evaluate existing and proposed (with project) drainage conditions during storm events ranging up to the 100- year event.

- b. The study shall consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.
- c. The drainage plan would include 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. 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 module 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 hydrologic study and drainage plan shall be prepared in accordance with the California City Grading Code and California City Public Works Department prior to the issuance of grading permits.

MM 4.10-3CC: Prior to issuance of a building permit for any on-site water treatment facilities, the project proponent/project operator shall provide evidence of compliance with any applicable Waste Discharge Requirements established by the Lahontan Regional Water Quality Control Board to the California City Public Works Department – Building and Safety Division.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.9-1KC, MM 4.10-1KC and MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.9-1CC, MM 4.10-1CC and MM 4.10-2CC, 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.

As stated above, the project site is located within the FVGB. The proposed project would source water from on- or off-site wells in the FVGB, other nearby solar projects, and/or imported water (from the State Water Project) purchased from a local retailer through the Antelope Valley-East Kern Water Agency. The project would require the use of groundwater during construction and operation of the solar facility. Project-related impacts to groundwater supplies during project construction and operation are described below.

Construction and Decommissioning

Water required during construction would be supplied by on- or off-site groundwater wells, drawing from the FVGB. Groundwater pumped from the FVGB would be required during the construction phase for such activities as dust suppression, soil compaction, and grading. Water may also be used at points of ingress/egress to minimize the tracking of dirt off-site onto local roadways from construction vehicles. Drinking water for construction workers would be provided in bottles trucked to the project site. Further, restroom facilities would be provided as portable units to be serviced by licensed providers, which would not require on-site water. Concrete used during construction for foundations and solar panel footings would be purchased from a local retailer, which would either provide mixed concrete or use trucks to mix concrete on-site. Historical groundwater production in the FVGB is approximately 32,000 AFY and has a storage estimated at 4,800,000 AF. Water usage during construction, primarily for dust-suppression purposes, is not expected to exceed 400 AF over the up to 18-month construction period (267 AF per year). DWR has designated the basin as a low-priority basin and a groundwater sustainability plan would not be required under the SGMA.

If at some future time the project should be decommissioned and solar facilities removed, there could be impacts involving use of local groundwater for dust control or other purposes; however, those impacts would be similar to and not more extensive than the initial construction impacts.

As discussed under Impact 4.16-2 in Section 4.16, *Utilities and Service Systems*, increasing groundwater consumption by solar energy facilities are included in the forecasts of water demand and supply for the FVGB, which is not in an overdraft condition and not subject to regulatory oversight by a Watermaster, as this is a non-adjudicated water basin. For the reasons above, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. As such, this temporary consumption of local groundwater would result in a less than significant impact on groundwater supplies and would not impede sustainable groundwater management of the FVGB.

Operation

Project operation and maintenance would require under 50 AF of water per year, which would be sourced from on-site wells or delivered via truck. If water is trucked into the site, it is anticipated that an available local water source would be selected to minimize truck trips/lengths in transporting water to/from the site. Operational water uses include safety precautions (fire water storage), washing of solar panels, and sanitary uses at the O&M building. Specifically, the Water Supply Assessment prepared for the project (see Appendix N) assumes that one or more 50,000-gallon water storage tanks would be used on-site to store water for fire-suppression uses on an as-needed basis. Water would also be required for washing the solar panels to maximize energy efficiency, which may require installation of a small water treatment system to provide deionized water. Project operation would also require water for the O&M building, including to serve the restroom facilities. No operational water demands are associated with the project inverter stations, energy storage system, or substations.

According to the Water Supply Assessment prepared for the project (see Appendix N), current and projected water supply and demand estimates are presented in the Integrated Regional Water Management Plan (IRWMP) for the Fremont Valley Basin region. As described in the IRWMP, there is a limited understanding of storage and withdrawal capacity in the basin and, because the basin is not adjudicated, pumping is not currently managed by a Watermaster. The IRWMP describes that the four largest industrial

water user categories in the Fremont Valley Basin are the solar, cannabis, mining, and manufacturing industries. The Fremont Valley Groundwater Management Plan (GWMP) also describes that population in this area is expected to grow more than 35 percent by 2040, and that industrial uses—including for the solar industry—are expected to grow substantially over this same time frame. The Fremont Valley GWMP provides current and projected water demand rates for the primary water uses in the area, including industrial uses, which account for solar developments.

The GWMP also estimates that total water supplied within the Fremont Valley GWMP area is expected to increase by more than 60 percent by 2040 to match increasing water demands, accounting for agricultural growth rates of baseline, light, medium, and heavy. The Fremont Valley GWMP determined that the light and medium agricultural growth scenarios are likely to be sustainable, whereas the heavy agricultural growth scenario may not be sustainable and could produce a condition of overdraft.

Projections of water supply availability in the FVGB vary depending upon the source and are highly dependent upon projected imported and surface water supplies in the area. As mentioned, the FVGB is identified by DWR as low priority, meaning that overdraft conditions are not present or imminent, and future management of groundwater resources in the area will include development and implementation of a groundwater sustainability plan, which may impose pumping restrictions if needed to facilitate groundwater supply reliability. In conclusion, estimates of increasing water demands in the project area account for solar developments such as the project and, although estimates of water supply availability are not specific to groundwater, it is generally anticipated that water supply availability will match water demand through conjunctive use management of groundwater and surface water resources. As such, the project would not substantially decrease groundwater supplies and impacts would be less than significant.

Surface water flows on-site following storm events mainly percolate into the groundwater basin via the soil. Although the project would introduce impervious surfaces to some areas of the project site from solar panel installation and other facilities, solar panels would be supported by relatively thin poles that would affect a limited ground surface area. Building foundations would be relatively small with respect to the overall acreage of the site, and the security fence poles would not result in a substantial increase in impervious surface area. A substantial amount of pervious surfaces would remain both on-site and in surrounding areas to provide areas for groundwater recharge via soil percolation. Therefore, the proposed project would not interfere substantially with groundwater recharge.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

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 which would result in substantial erosion and/or sedimentation on-site or off-site.

Construction and Decommissioning

The majority of the proposed project facilities and construction activities have been designed to avoid existing drainage areas so as to not to intercept or alter the conveyance of ephemeral/episodic flows through the project site during storm events.

During construction and decommissioning, ground disturbance (via activities such as grading and excavation) within drainage areas as well as in non-drainage areas may alter drainage patterns of the site. These changes could concentrate flows from storms and construction water usage, and thus result 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 since water flow is more concentrated in these areas and has a higher erosive power. However, as described above in Impact 4.10-1, the project proponent/operator would develop and implement a SWPPP during project construction and decommissioning which would include various BMPs designed to prevent soil erosion and sedimentation from occurring on-site. In addition, the project must comply with the Kern County Grading Ordinance and California City Grading Ordinance, which require implementation of dust control during all grading operations and the use of temporary drainage and erosion control measures on-site as needed. Furthermore, Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would require the project proponent/operator to prepare a final hydrologic study and drainage plan per the Kern County Development Standards and the Kern County Code of Building Regulations prior to issuance of a grading permit. Per Mitigation Measures MM 4.10-1KC and MM 4.10-1CC, construction and decommissioning related ground disturbance within drainage areas would be minimized and timed to avoid the rainy season to the maximum extent possible. The proposed project would also maintain pervious surfaces on-site surrounding construction areas, which would help increase the potential for waters to percolate into the ground and reduce the likelihood of major erosion or sedimentation impacts following rain events.

With implementation of Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, MM 4.10-1CC, and MM 4.10-2CC and required compliance with applicable regulations, the potential for on-site and off-site erosion and sedimentation that could occur from alterations to topography would be reduced during construction or decommissioning. Therefore, impacts in this regard would be less than significant.

Operation

The proposed solar facilities may be placed within existing drainage flow paths which could alter and intensify stormwater flows during a rain event, causing sedimentation or erosion impacts. However, as described in Impact 4.10-1, Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would require preparation of a hydrologic study and a drainage plan in accordance with the Kern County Development Standards and Kern County Code of Building Regulations. Based on the findings of the hydrologic study, the drainage plan would recommend a design that would include post-construction BMPs such as on-site

retention basins, which would retain runoff during project operation, thereby minimizing the potential for erosion and sedimentation. The drainage plan would demonstrate that the project has been designed to ensure stormwater runoff outside of the project site would not exceed the runoff generated under current conditions. The project would also maintain pervious surfaces on-site surrounding the project facilities, which would help to increase the potential for stormwater to percolate into the ground surface rather than resulting in runoff that may cause erosion or sedimentation. With implementation of Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.

City of California City

Implement Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.10-1KC and MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC, 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 which would substantially increase the rate or amount of surface runoff which would result in flooding on- or off-site.

Construction and Decommissioning

As shown in Figure 3-5, *FEMA Map*, the southern and southeastern parcels of the project site and portions of the Site 3 collector lines are located within the FEMA-designated Zone A 100-year floodplain of an unnamed intermittent stream. The alteration of surface topography via ground disturbance and construction of facilities that introduce impervious surfaces could potentially alter drainage patterns such that flooding could be exacerbated on-site during a rain event. Areas surrounding drainages are especially prone to flooding. However, the erosion control and sedimentation control BMPs required by the SWPPP and drainage control measures required by the Kern County Grading Ordinance and any comparable California City regulations would also help to control flows on-site by maintaining existing vegetation or installing structures designed to slow and/or control flows. Further, implementation of Mitigation Measure MM 4.10-2KC and MM 4.10-2CC would require preparation of a hydrologic study and drainage plan. The drainage

plan would recommend an on-site design that complies with all channel setback requirements and ensures facilities are located in such a way to lessen their impact on drainage areas. Additionally, per Mitigation Measure MM 4.10-1KC and MM 4.10-1CC, construction-related ground disturbance required within drainage areas would be minimized and timed to avoid the rainy season when possible. Therefore, ground disturbance within channels would be planned and timed to avoid exacerbation of flooding on-site. In summary, with implementation of Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, MM 4.10-1CC, and MM 4.10-2CC, as well as compliance with applicable regulations, project-related construction activities would not alter drainage patterns in the area in a way that would result in flooding on- or off-site and impacts would be less than significant. Alterations to surface drainage patterns during potential future decommissioning activities would occur, but would remove impervious surfaces that increase runoff, and would likely be less extensive than the alterations that would occur during initial site construction. The temporary impact would be less than significant.

Operation

Changes to drainage patterns on-site, including installation of facilities both in drainage areas and adjacent to drainage areas, could alter site drainage patterns and increase surface runoff such that increased flooding would result. However, as described in Impact 4.10-1, Mitigation Measure MM 4.10-2KC and MM 4.10-2CC would require preparation of a hydrologic study and a drainage plan in accordance with the Kern County Development Standards and Kern County Code of Building Regulations as well as any applicable drainage-related development standards and building regulations required by the City of California City. The drainage plan would include post-construction BMPs such as a retention basin that would collect and retain runoff during project operation, thereby preventing increased flooding on- or off-site. Further, the final drainage plan would demonstrate that off-site stormwater discharge from the developed project site would not exceed the amount of stormwater runoff under existing conditions.

As the project site is partially within a FEMA-designed Special Flood Hazard Area (100-year floodplain), portions of the project site would be subject to flooding during storm events. Specifically, a Special Flood Hazard Area, Zone A, is located in the southern and southeastern areas of the project site, meaning that these areas are subject to inundation by the 1-percent-annual-chance flood event. As shown in Figure 3-5, *FEMA Map*, the remainder of the project site is designated as Zone X by FEMA (areas of minimal flood hazard). As described above, the project would result in an increase in impervious surfaces on the project site as compared with existing conditions resulting from development including equipment foundations, the O&M building, substations, and energy storage facilities. While the project would increase impervious surfaces to a minor extent, the large majority of the project site would be maintained as pervious surface, these pervious surfaces would help maintain the drainage patterns of the existing site and would promote groundwater recharge, reducing the severity of flood events.

As the project site is partially located in a FEMA Special Flood Hazard Area, the project would be required to comply with Kern County's Municipal Code for flood damage protection and regulations established in the County's Municipal Code Section 17.48 Floodplain Management. Specifically, the project would need to comply with Article III of Section 17.48, which details required construction standards for projects in Special Flood Hazard Areas. In compliance with Article III of Section 17.48, the project would be required to be constructed with materials and equipment that are resistant to flood damage, and development would be required to include adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures. Similarly, the project would be required to comply with Title 8, Chapter 11, Flood Damage Prevention, of the California City Code of Ordinances, which applies to all Special Flood

Hazard Areas within the City of California City and details construction standards for development within FEMA-designated Special Flood Hazard Areas. As stated above, Mitigation Measure MM 4.10-2KC and MM 4.10-2CC would require preparation of a hydrologic study and a drainage plan in accordance with the Kern County Development Standards and Kern County Code of Building Regulations and would evaluate the changes to hydrology on-site and recommend measures to minimize potential increases in runoff from the project site. The drainage plan would be submitted for review and approval by the Kern County Public Works Department and California City Public Works Department. Based on the findings of the hydrologic study, the drainage plan would recommend a design that would include post-construction BMPs such as on-site stormwater storage that would retain runoff during project operation, thereby preventing flooding on- and off-site. Hydraulic analysis would verify that the project would not result in an impact to the floodplain from construction of the proposed facilities.

Therefore, with implementation of Mitigation Measure MM 4.10-2KC and MM 4.10-2CC and compliance with the County's design standards for projects within Special Flood Hazard Areas, impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.

City of California City

Implement Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.10-1KC and MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC, impacts would be less than significant.

Impact 4.10-5: 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 which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The project site does not support any existing stormwater drainage systems and no stormwater drainage systems are proposed for the project site. The site naturally drains via sheet flow and via existing natural drainages, and would do so during construction, operation, and decommissioning. Per Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, the proposed project would be required to design a drainage plan per

the findings of a hydrologic study. Further, per Mitigation Measures MM 4.10-3KC and MM 4.10-3CC, any on-site water treatment facilities that may be built must comply with applicable Waste Discharge Requirements established by the Lahontan RWQCB, which would prevent additional sources of polluted runoff from such facilities. Based specifically on site characteristics, the drainage plan would recommend a project site designed to minimize flooding, and would require the implementation of any measures necessary, such as construction of a series of on-site retention basins or underground storage, if feasible, to collect and retain any excessive runoff generated so that the proposed project would not result in stormwater runoff outside of the project site that exceeds stormwater discharge under existing conditions. The proposed project would also maintain pervious surfaces on-site surrounding project facilities, which would allow for infiltration of stormwater on-site. Pollution of runoff would be avoided per the measures detailed above in Impact 4.10-1. The proposed project would not construct any municipal storm drainage facilities, on- or off-site.

If, at some future time, the solar facilities should be decommissioned and removed, there would be a reduction in impervious surfaces and thus reduced impacts involving potential site runoff. No off-site municipal storm drainage facilities would be impacted. Impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.10-1KC through MM 4.10-3KC.

City of California City

Implement Mitigation Measure MM 4.10-1CC through MM 4.10-3CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measure MM 4.10-1KC through MM 4.10-3KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measure MM 4.10-1CC through MM 4.10-3CC, impacts would be less than significant.

Impact 4.10-6: 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 which would impede or redirect flood flows.

As discussed above, the southern and southeastern parcels of the project site are located within a FEMA Special Flood Hazard Area (Zone A 100-year floodplain of an unnamed intermittent stream). Therefore, the proposed project would introduce structures within flood zones. However, per Mitigation Measure MM 4.10-2KC and MM 4.10-2CC, the drainage plan for the proposed project site would be designed to effectively control surface flows on-site, and project facilities would be designed to maintain 1 foot of

freeboard clearance above the calculated maximum flood depths. Additionally, the drainage plan would demonstrate that the proposed project's stormwater runoff outside of the project site would not exceed the amount of stormwater runoff under current conditions. The proposed project would also maintain some existing pervious surfaces on-site and would be surrounded by pervious areas, which would help control any impeded or redirected flood flows. Further, as a portion of the project is located within a FEMA-designated Special Flood Hazard Area, the project would be required to comply with the County's and the City's design standards for new construction within Special Flood Hazard Areas, such as using materials and equipment that are resistant to flood damage, and including adequate drainage paths around structures to guide flood waters around and away from proposed structures. If there should be a future decommissioning and removal of the solar facilities, there would be similar and likely less extensive temporary impacts to surface flows than during the initial construction activities. When decommissioning is completed, there would be no impact involving impeding or redirecting flood flows.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.10-2KC.

City of California City

Implement Mitigation Measure MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measure MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measure MM 4.10-2CC, impacts would be less than significant.

Impact 4.10-7: The project would result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides, or volcanic activity. A seiche is a standing wave in an oscillating body of water. The project site is located over 70 miles northeast of the Pacific Ocean and there are no enclosed bodies of water within the project vicinity. Therefore, the risk for tsunami or seiche in the project area is very low and there would be little or no chance for an impact involving release of pollutants during such events.

As discussed above, the southern and southeastern portions of the project site are located within the 100-year floodplain of an unnamed intermittent stream. The project's location within FEMA-designated Special Flood Hazard Areas and proposed alteration of surface topography could alter drainage patterns such that flooding could be exacerbated on-site during a rain event. Implementation of Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, MM 4.10-1CC, and MM 4.10-2CC, which include construction BMPs (as outlined in a SWPPP) and would require California City and Kern County to approve the final hydrologic study and drainage plan, which would demonstrate how the project would not increase surface runoff when

compared with current conditions, would help control flooding caused by construction of the project. In addition, the project would not include the use, storage, or disposal of substantial quantities of hazardous materials, which could be mobilized during a flood event. Specifically, the project would include Mitigation Measures MM 4.9-1KC and MM 4.9-1CC, which requires the implementation of a Hazardous Materials Business Plan, which would ensure safe handling of construction-related hazardous materials on-site, thus providing the means for prompt cleanup in the event of an accidental hazardous material release.

Because the project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body, there would be no potential threat from tsunami or seiche waves. In this context, the project would not contribute to inundation by a flood hazard, tsunami, or seiche zones that would then increase the risk of pollutants release; a less than significant impact would be expected. If the project should be decommissioned in the future, there would be no impacts involving flooding, tsunami or seiche. Potential release of water pollutants during decommissioning activities would be reduced to less than significant through implementation of Mitigation Measures MM 4.10-1KC and MM 4.10-1CC.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.9-1KC, MM 4.10-1KC, and MM 4.10-2KC.

City of California City

Implement Mitigation Measures MM 4.9-1CC, MM 4.10-1CC, and MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.9-1KC, MM 4.10-1KC, and MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.9-1CC, MM 4.10-1CC, and MM 4.10-2CC, 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.

As noted above, the project site is located within the South Lahontan RWQCB and is subject to the applicable requirements of the Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan sets the water quality standards for the basin, identifies water quality problems and control measures, and identifies monitoring activities for waste discharge requirements. As described in Impact 4.10-1, Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would require preparation of a hydrologic study and a drainage plan in accordance with the Kern County Development Standards and Kern County Code of Building Regulations and any applicable drainage-related development standards required by the City of California City that would evaluate the changes to hydrology on-site and recommend measures to minimize potential increases in runoff from the project site. This would apply to all solar facilities. Based on the

findings of the hydrologic study, the drainage plan would recommend a design that would include post-construction BMPs such as on-site retention basins or underground storage, which would retain runoff during project operation, thereby preventing erosion and sedimentation. The drainage plan would demonstrate that proposed project improvements would not result in an increase in off-site stormwater runoff as compared with existing conditions. The project would include required BMPs and drainage control requirements to satisfy County and City design standards that would be consistent with the Basin Plan. With implementation of Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, impacts would be less than significant.

Water used during project construction, operation, and future decommissioning is anticipated to be primarily obtained from on-site or off-site groundwater wells, with some water delivered to the project via truck by off-site commercial vendors. As stated above, the project site is located within the FVGB. The basin is neither adjudicated nor managed by a GSA. In addition, the FVGB has been designated as a low-priority basin by DWR and a groundwater sustainability plan would not be required under the SGMA. Therefore, the project would not conflict with the groundwater management of the area and potential impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.10-1KC and MM 4.10-2KC.

City of California City

Implement Mitigation Measures MM 4.10-1CC and MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.10-1KC and MM 4.10-2KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, of this EIR, approximately 14 projects, 13 of which are solar, are proposed for development throughout the Fremont Valley and western Antelope Valley. The geographic scope used to identify projects listed in Table 3-3, *Cumulative Projects List*, is the FVGB.

Construction, operation, and decommissioning of the proposed project has the potential to degrade water quality. The proposed project would avoid impacts to water quality and during construction and decommissioning following compliance with the Kern County NPDES Applicability Form (that requires SWPPP development) and the Kern County and City of California City Grading Codes. The proposed

project would avoid impacts to water quality by developing a final drainage plan based on a hydrologic study. Development of a Hazardous Materials Business Plan per Mitigation Measures MM 4.9-1KC and MM 4.9-1CC would avoid water quality impacts from hazardous materials during all project phases. Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would recommend an on-site design that complies with all channel setback requirements and ensure facilities are located in such a way to lessen their impact on drainage areas and their water quality. The drainage plan would also recommend incorporation of measures, such as retention basins, to manage flow concentration so that erosion and sedimentation are minimized on-site during storm events during project operation. The drainage plan would also demonstrate that the proposed project would manage stormwater such that operational stormwater flows discharged off-site would not exceed current stormwater flows under existing conditions. Mitigation Measures MM 4.10-1KC and MM 4.10-1CC would require that ground disturbance required within drainages is minimized and timed to avoid the rainy season where possible. The County requires these same measures for all projects, which would reduce cumulative impacts to less than significant.

Additionally, the proposed project may require the installation of new groundwater wells on-site, the installation of which could impact groundwater quality. The extraction of contaminated groundwater for subsequent use on the project site could also impact surface water quality. However, the project proponent/operator would be required to complete a water well application, including a water sample, for County review and approval for any new wells that are proposed on-site. Other projects in the region may also be required to install groundwater wells, but would be subject to the same County well permitting requirements. Other projects within the region would be subject to Kern County and/or California City regulations governing grading, construction stormwater controls, hazardous materials business plan requirements, hydrologic study/drainage plan requirements, and County well permitting requirements that would help avoid significant, cumulative impacts to water quality. Therefore, cumulative impacts to water quality would be less than significant.

With regard to impacts related to an aquifer deficit or substantial depletion of groundwater supplies, the proposed project would primarily depend on the FVGB for water during construction, operation, and decommissioning. The project would either obtain water from an adjacent existing groundwater well or from new groundwater wells drilled on-site. Other projects within the region would also likely depend on the groundwater basin for their water supply. Any new project that proposes to extract groundwater from the FVGB must provide evidence to DWR to demonstrate that the new wells would not adversely affect other wells or adversely affect groundwater supplies. As noted in the discussion of project-level impacts, the Fremont Valley GWMP has estimated future water demands with an expectation of continuing growth in demand from utility-scale solar projects and has determined that there are sufficient long-term groundwater resources to meet those needs as well as other projected needs. Cumulative impacts on groundwater resources, therefore, are anticipated to be less than significant.

Ground-disturbing construction activities and the presence of impervious project facilities on-site during project operation could alter drainage paths of surface flows, which could result in erosion, sedimentation, and/or flooding. Erosion and sediment control BMPs implemented as part of the SWPPP, Kern County Grading Code, and California City Grading Code, during construction and decommissioning would help avoid erosion and sedimentation from occurring, and could also help control surface flows and runoff so as to avoid flooding. Further, Mitigation Measures MM 4.10-2KC and MM 4.10-2CC includes development of a drainage plan recommending an on-site design that complies with all channel setback requirements, ensures facilities are located in such a way to lessen their impact on drainage areas, and includes post-construction BMPs such as on-site retention basins that would retain runoff during project operation,

thereby preventing erosion and sedimentation. The proposed project would also maintain pervious surfaces on-site surrounding project facilities, which would help prevent excess flooding.

Implementation of Mitigation Measures MM 4.10-1KC and MM 4.10-1CC would require the minimization of ground disturbance needed within drainages and avoidance of ground disturbance in drainages during the rainy season when possible. Other projects would also be subject to the requirements of the Kern County Grading Code and any applicable California City standards, hydrologic study/drainage plan requirements, and SWPPP development (if applicable). Therefore, other projects would also implement measures to help reduce potential impacts related to erosion, sedimentation, and flooding. Cumulative impacts related to the alteration of drainage patterns and subsequent erosion, sedimentation, and flooding would be less than significant.

Given its relatively undeveloped nature, the majority of land in the region does not have existing stormwater drainage systems, and instead contains natural drainages. Per Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, the proposed project would be required to design a drainage plan per the findings of a hydrologic study. As stated above, the drainage plan would recommend an on-site design that complies with all channel setback requirements and would ensure that facilities are located in such a way to lessen their impact on drainage areas. Further, on-site stormwater management facilities, such as retention basins, would collect and retain excessive runoff so that project-generated runoff would not exceed existing runoff volumes. Further, as a portion of the project site is located within a FEMA-designated Special Flood Hazard Area, the drainage plan would recommend an on-site design that would comply with County drainage and construction design standards for structures constructed within a FEMA floodplain. The proposed project would also maintain pervious surfaces on-site surrounding project facilities, which would help prevent excess runoff. Pollution of runoff would be avoided per the measures described above related to reducing impacts to water quality. Other projects in the region would be subject to hydrologic study/drainage plan requirements and water quality degradation prevention measures. Cumulative impacts related to exceedance of drainage system capacity and polluted runoff would be less than significant.

Portions of the project site would be located within a FEMA-designated Special Flood Hazard Area (a Zone A, 100-year); therefore, the project would introduce structures within these flood zones. Per Mitigation Measures MM 4.10-2KC and MM 4.10-2CC, the drainage plan for the proposed project site would be designed to effectively control surface flows on-site, and project facilities would be designed to maintain one-foot of freeboard clearance above the calculated maximum flood depths. The project would be required to comply with the County's Municipal Code for flood damage protection and regulations established in the County's Municipal Code Section 17.48 Floodplain Management. Specifically, the project would need to comply with Article III of Section 17.48, which details required construction standards for projects in Special Flood Hazard Areas such as the requirements that construction projects use materials and equipment that are resistant to flood damage, and that any development include adequate drainage paths to guide flood waters around and away from proposed structures. Further, the project would be required to comply with Title 8, Chapter 11, Flood Damage Prevention, of the California City Code of Ordinances, which applies to all Special Flood Hazard Areas within the City of California City and details construction standards for development within FEMA-designated Special Flood Hazard Areas. The proposed project would also maintain some existing pervious surfaces on-site and be surrounded by pervious areas, which would help control any impeded or redirected flood flows. Many other projects in the region would also be located within FEMA-designated Special Flood Hazard Areas (100-year flood zones), but would be subject to similar drainage plan and design standards enforced by the County and/or City. Cumulative impacts related to the placement of structures within a 100-year flood hazard area would be less than significant.

Based on the conclusions above and continued implementation of County and California City construction and design standards, the project's contribution to cumulative impacts relating to hydrology and water quality would be less than cumulatively considerable, and overall, cumulative impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.9-1KC (see Section 4.9, *Hazards and Hazardous Materials*, for full Mitigation Measure text), MM 4.10-1KC, and MM 4.10-2KC.

City of California City

Implement Mitigation Measures MM 4.9-1CC (see Section 4.9, *Hazards and Hazardous Materials*, for full Mitigation Measure text), MM 4.10-1CC, and MM 4.10-2CC.

Level of Significance after Mitigation

Kern County

With incorporation of Mitigation Measures MM 4.9-1KC, MM 4.10-1KC, and MM 4.10-2KC, cumulative impacts would be less than significant.

City of California City

With incorporation of Mitigation Measures MM 4.9-1CC, MM 4.10-1CC, and MM 4.10-2CC, cumulative impacts would be less than significant.

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4.11.1 Introduction

This section describes the affected environment and regulatory setting of the proposed project for impacts that may affect land use and planning. It also discusses the need for mitigation measures where applicable. The information in this section is based primarily on a review of the Kern County General Plan, Fremont Interim Rural Community Plan, Kern County Zoning Ordinance, California City General Plan, and California City Zoning Regulations.

4.11.2 Environmental Setting

On-site Land Uses

The project site is located in portions of unincorporated Kern County and within the municipal limits of the City of California City, north of the California City Municipal Airport. The majority of the project site is bisected by Washburn Boulevard (which is also the California City boundary) and Neuralia Road. The project site is currently undeveloped.

The project site consists of five sites (Sites 1 through 5) on 75 parcels located in unincorporated Kern County and California City, with a total of 1,955.13 acres. As shown on Figure 3-2, *Project Site Boundaries*, Site 1, the most westernmost site, straddles the north and south sides of Phillips Road, and is bordered on the west by Pioneer Road (unpaved), and is west of Cheyenne Boulevard (unpaved). Site 2 is bordered to the west by Cheyenne Road, bordered to the east by Neuralia Road, is located on the north and south of Washburn Boulevard, which is the jurisdictional boundary between unincorporated Kern County and California City, and is directly north of California City Municipal Airport. Most of Site 2 is within California City. Site 3 is fully within California City, is bordered to the west by Neuralia Road, is north and south of Rudneck Boulevard, and is west of 100th Street. Site 4 is located along Phillips Road at the intersection with Barrel Cactus Street, and just east of the existing Eland Substation. Site 5 consists of two separate site areas along Neuralia Road, north of Phillips Road. The project sites are located within the boundaries of the Kern County General Plan, the Fremont Interim Rural Community Plan, and the City of California City General Plan. As shown on Figure 3-2, *Project Site Boundaries*, 42 of the project parcels (totaling 673.60 gross acres) are located within unincorporated Kern County, and 33 of the project parcels (totaling 1,281.53 gross acres) are located within the jurisdictional limits of the City of California City.

Kern County and Fremont Interim Rural Community Plan Area

The portion of the project site located north of Washburn Boulevard is within the Kern County General Plan and Fremont Interim Rural Community Plan area. As shown on Figure 3-7, *Existing General Plan Designations - Kern County*, the project parcels located in unincorporated Kern County are designated by the Kern County General Plan as Map Code 8.5 (Resource Management, Min. 20 Acre Parcel Size) and by the Fremont Interim Rural Community Plan as 5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit).

The project parcels located in unincorporated Kern County are subject to the provisions of the Kern County Zoning Ordinance. The project site is zoned as specified in Table 3-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, and depicted on Figure 3-8, *Existing Zoning - Kern County*. The project parcels located in unincorporated Kern County have a zone classification of A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining).

City of California City

The portion of the project site located south of Washburn Boulevard is within the California City General Plan area. As shown on Figure 3-12, *Existing General Plan Designations - California City*, the project parcels located in California City are designated by the General Plan as O/RA (Controlled Development & Open Space, Public Parks & Recreation or Public Schools).

The project parcels located in California City are subject to the provisions of the California City Zoning Regulations. As shown on Figure 3-13, *Existing Zoning - California City*, the project parcels located in California City have a zone classification of O/RA (Open Space/Residential Agriculture).

Surrounding Land Uses

Existing land uses in the surrounding area are primarily undeveloped and existing developed solar facilities. The Fremont rural community is located in the project vicinity and consists predominantly of rural residential dwellings. Table 4.11-1, *Project Site and Surrounding Land Uses*, identifies the project site and surrounding land uses. The project site is adjacent to the approved Eland 1 Solar Farm, south of the existing Springbok 1 and 2 Solar Farms and southeast of the Los Angeles Department of Water and Power Beacon solar facility.

The project site is transected by Union Pacific Railroad (Site 1), the north-south traversing Neuralia Road and east-west traversing Washburn Boulevard. State Highway 14 is located to the west, 100th Street to the east, and the California City Municipal Airport to the south. The California City Municipal Airport, operated by California City, is located directly south of the eastern portion of Site 2.

Table 4.11-1. Project Site And Surrounding Land Uses

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Project Site (Kern County Portion)	Undeveloped	5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit); 8.5 (Resource Management, Min. 20 Acre Parcel Size)	A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)
Project Site (California City Portion)	Undeveloped	O/RA (Controlled Development & Open Space)	O/RA (Open Space/Residential Agriculture)
North	Undeveloped, sparse rural residential dwellings	5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit); 8.5 (Resource Management, Min. 20 Acre Parcel Size)	A (Exclusive Agriculture); A FPS (Exclusive Agriculture, Floodplain Secondary Combining); A-1 (Limited Agriculture)
East	Undeveloped	Kern County: 8.5 (Resource Management, Min. 20 Acre Parcel Size); 1.2 (Incorporated Cities) California City: O/RA (Controlled Development & Open Space)	Kern County: A (Exclusive Agriculture); California City: O/RA (Open Space/Residential/Agricultural)
South	Undeveloped, Eland Solar Project (south of Site 1), California City Airport	Kern County: 8.5 (Resource Management, Min. 20 Acre Parcel Size); 1.2 (Incorporated Cities) California City: O/RA (Controlled Development & Open Space)	Kern County: A (Exclusive Agriculture); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) California City: O/RA (Open Space/Residential Agriculture) California City Airport ALUCP Zones A (Runway protection Zone or within Building Restriction Line), B1 (Approach/Departure Zone and Adjacent to Runway) and C (Common Traffic Pattern Zone)
West	Undeveloped	8.5 (Resource Management, Min. 20 Acre Parcel Size); 1.2 (Incorporated Cities) California City: O/RA (Controlled Development & Open Space)	Kern County: A (Exclusive Agriculture) California City: O/RA (Open Space/Residential Agriculture) California City Airport ALUCP Zone C (Common Traffic Pattern Zone)

4.11.3 Regulatory Setting

Federal

West Mojave Plan Habitat Conservation Plan

The West Mojave Plan is a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS), and nearly 100 other sensitive plants and animals and the natural communities of which they are a part, and (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts (CESA and FESA, respectively). The 9,359,070-acre planning area is located north of the Los Angeles metropolitan area. The West Mojave Plan's conservation program applies to both public and private lands within this area. These lands include 3,263,874 acres of public lands administered by the Bureau of Land Management, 3,029,230 acres of private lands, and 102,168 acres of lands administered by the State of California.

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, Fremont Interim Rural Community Plan, Kern County Zoning Ordinance, California City General Plan, California City Zoning Regulations, and the Airport Land Use Compatibility Plan (ALUCP). The Kern County General Plan and California City General Plan contain goals, objectives, and policies and provide an overall foundation for establishing land use patterns. For this land use impact analysis, this section lists all relevant goals, objectives, and policies related to the proposed project. The Kern County Zoning Ordinance contains regulations through which the Kern County General Plan's provisions are implemented. The California City Zoning Regulations contain regulations through which the California City General Plan's provisions are implemented. The ALUCP establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. 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. The Kern County General Plan includes the Land Use, Open Space, and Conservation Element, which provides for a variety of land uses for future economic growth while also ensuring the conservation of Kern County's agricultural, natural, and resource attributes. In 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) physical and environmental constraints overlay; (3) public

facilities and services; (4) special treatment areas (accepted county plan areas, rural communities and specific plan required); (5) residential; (6) commercial; (7) industrial; and (8) resource.

As mentioned, the project parcels located in unincorporated Kern County are designated by the Kern County General Plan as Map Code 8.5 (Resource Management, Min. 20 Acre Parcel Size) and by the Fremont Interim Rural Community Plan as 5.6 (Interim Rural Community/Min. 2.5 Gross Acres/Unit). Each map code/overlay area contains specific goals, policies, and implementation measures to guide development within them.

In addition to the Land Use, Open Space, and Conservation Element, the Kern County General Plan includes other elements related to circulation, noise, safety, 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 project are listed below.

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, 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 2: In order to minimize risk to Kern County Residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria and standards for the approval of development in hazard areas.

Policy 3: Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.

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.

1.4 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.

Policy

- 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.

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 time of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.
- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.
- Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.5 Special Treatment Areas

Goal

Goal 1: To recognize the validity of existing Specific Plan and Rural Community Plan decisions and to identify areas for which similar detailed planning efforts should be undertaken in the future so as to best meet the needs and concerns of local residents.

Policy

Policy 3: Rural communities are historically identifiable small-scale non-urban settlements located in outlying areas of the County which contain a mixture of residential and supportive commercial and other uses serving the community and the surrounding rural population. The County will ensure that the unique character of these communities is preserved and enhanced by recognizing the scale, density, size, and composition of development.

1.9 Resource

Goals

Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

Goal 3: Ensure the development of resource areas minimize effects on 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 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 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 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 19: Work with other agencies to define regulatory responsibility concerning energy-related issues.

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 Measure

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 Environmental 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 characterizes the quality of upper groundwater in the project vicinity and evaluation of the extent to which, if any, the proposed use of alternative septic systems will adversely impact groundwater quality. If the evaluation indicates 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 shall 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:
- a. All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - b. The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control district on ministerial permits.
- Policy 21: The County shall support air districts' efforts to reduce PM₁₀ and PM_{2.5} emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to: a. Minimizing idling time. b. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
- a. Pave dirt roads within the development.
 - b. Pave outside storage areas.
 - c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
 - d. Use of alternative fuel fleet vehicles or hybrid vehicles.
 - e. Use of emission control devices on diesel equipment.
 - f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
 - g. Provide bicycle lockers and shower facilities on site.
 - h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).

- i. The use and development of park and ride facilities in outlying areas.
- j. Other strategies that may be recommended by the local Air Pollution Control Districts

Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure: N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

1.10.5 Threatened and Endangered Species

Policies

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.

Policy 28: County should work closely with state and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

Policy 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 United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to

enhance drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measure

Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.

Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

1.10.6 Surface Water and Groundwater

Policies

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act, 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.

Chapter 2. Circulation Element

2.1 Introduction

Goal

Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.

2.3.3 Highways Plan

Policy

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.

2.3.4 Future Growth

Policies

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.

2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements

Goals

Goal 1: Provide a means for guiding decisions on vacating public roads.

Goal 2: Kern County intends to set up a system maintaining and coordinating road vacation procedures in all elements of the General Plan and the incorporated cities general plans.

Policies

- Policy 2: Provide a means for guiding decisions on vacating public roads. A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.
- Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.
- Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.
- Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.
- Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.
- Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.
- Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.
- Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.
- Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.

2.3.10 Congestion Management Programs

State law requires that urbanized counties (including Kern County) prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures to attain and maintain the State air quality standards.

Goal

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.

2.5.1 Trucks and Highways

Goals

Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.

Goal 2: Reduce potential overweight trucks.

Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.

2.5.2 Airport Land Use Compatibility Plan

Goal

Goal 1: Plan for land uses that are compatible with public airport and military bases and mitigate encroachment issues.

Policy:

Policy 2: To the extent legally allowable, prevent encroachment on public airport and military base operations from incompatible, unmitigated land uses.

Implementation Measures

Measure A: Review discretionary land use development applications within the airports influence area and the military base operating area as shown in the ALUCP for consistency.

Measure B: Coordinate and cooperate with airport operators, the County Department of Airports, the California Department of Transportation, Division of Aeronautics, affected cities, Edwards

Air Force Base, NAWS China Lake and the Department of Defense on the ALUCP, review of land use applications, public education and encroachment issues.

Chapter 3. Noise Element

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 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Policy 5: Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels:
- a. 65 db-Ldn or less in outdoor activity areas.
 - b. 45 db-Ldn or less within living spaces or other noise sensitive interior spaces.
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- 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 4. Safety Element

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

Policies

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 2: The County will encourage the promotion of public education about fire safety at home and in the work place.

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 5: Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

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***Implementation Measures***

- Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.
- Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5 Landslides, Subsidence, Seiche, and Liquefaction***Policies***

- Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

4.6 Wildland and Urban Fire***Policies***

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 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.

4.9 Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.2 General Policies

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 Electricity Resources and Generation

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.

Policy 7: The processing of all discretionary energy project proposals shall comply with the State CEQA Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.

Policy 8: The County should work closely with local, State, and Federal agencies to ensure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts on 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.

Implementation Measure

Measure B: The County should work with affected State and federal agencies and interest groups to establish consistent policies for solar energy development.

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.

Policies

Policy 1: The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County's residents and access the County's generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.

Policy 2: The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.

Policy 3: In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.

Policy 4: The County should work with other agencies in establishing routes for proposed transmission lines.

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

Policy 6: The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.

Implementation Measures

Measure A: The County should monitor the supply and demand of electrical transmission capacity locally and statewide.

Measure B: The County shall continue to maintain provisions in the Zoning Ordinance.

Fremont Interim Rural Community Plan

The central portion of the project site located within unincorporated Kern County is designated 4.2 (Interim Rural Community Plan) by the Kern County General Plan. Map Code 4.2 is used to identify settlements in

the County that have individual character which, in past plans, have been broadly merged with the surrounding countryside. These settlements are recognized as unique communities. As shown on Figure 3-7, *Existing General Plan Designations - Kern County*, in Chapter 3, Project Description, of this EIR, the central portion of the project site is within the 5.6 (Min. 2.5 Gross Acres/Unit) designation of the Fremont Interim Rural Community Plan (Kern County n.d.).

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 map that delineates the boundaries of zoning districts; and text that explains the purpose of the districts, specifies permitted and conditional uses and establishes development and performance standards. The intent of the Zoning Ordinance is to protect public health, safety, and the general welfare of residents and visitors in the County. Together with the Zoning Map, the Zoning Ordinance 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 Ordinance 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 Ordinance also regulates which uses are permitted in each of the County's zoning districts to ensure compatibility between land uses.

A (Exclusive Agriculture)

The purpose of the A district is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Permitted land uses in the district include agriculture, commercial uses, utility lines and substations, resource extraction, energy development, and miscellaneous accessory structures related to permitted uses. Miscellaneous accessory structures that are related to the permitted uses area also allowed. Pursuant to Section 19.12.030 of the Kern County Zoning Ordinance, solar facilities are permitted on land zoned Exclusive Agriculture (A) with approval of a conditional use permit (CUP).

A-1 (Limited Agriculture)

The purpose of the A-1 zone district is to designate areas suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses. Final map residential subdivisions are not allowed in the A-1 district. Permitted land uses include agriculture, residential uses, commercial uses, utility and communication facilities, resource extraction, energy development, institutional uses, and miscellaneous accessory structures related to permitted uses. Pursuant to Section 19.14.030 of the Kern County Zoning Ordinance, solar facilities are permitted on land zoned Limited Agriculture (A-1) with approval of a CUP.

MH (Mobile Home Combining)

The purpose of the Mobilehome (MH) Combining District is to provide for the installation of mobile homes with or without foundations in agricultural, resource-related, and residential zoned areas. The MH District may be combined with A-1 (Limited Agriculture), R-1 (Low-density Residential), E (Estate), PL (Platted Lands), or the RF (Recreation-Forestry) Districts.

PL (Platted Lands)

The purpose of the Platted Lands (PL) District is to recognize legally existing lots within recorded subdivisions that have been rendered non-conforming with regard to minimum lot size requirements of the various Resource designations (8.1, 8.2, 8.3, 8.4, and 8.5) of the County General Plan. Uses in the PL District are limited primarily to residential uses and other activities compatible with the area to which the PL District is applied.

RS (Residential Suburban Combining)

The purpose of the Residential Suburban (RS) Combining District is to expand the number and type of permitted domestic agricultural uses within rural residential areas. The keeping of animals permitted by the RS District is an accessory use and shall not be established until a primary use is established.

Section 19.104.040 Basis for Approval

The decision-making authority may approve or conditionally approve an application for a conditional use permit if it finds all of the following:

- A. The proposed use is consistent with the goals and policies of the applicable General or Specific Plan.
- B. The proposed use is consistent with the purpose of the applicable district or districts.
- C. The proposed use is listed as a use subject to a conditional use permit in the applicable zoning district or districts or a use determined to be similar to a listed conditional use in accordance with the procedures set out in Sections 19.08.030 through 19.08.080 of this title.
- D. The proposed use meets the minimum requirements of this title applicable to the use.
- E. The proposed use will not be materially detrimental to the health, safety, and welfare of the public or to property and residents in the vicinity.

Airport Land Use Compatibility Plan

The Kern County ALUCP establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations.

Military Aviation Operations

Section 4.17 of the ALUCP addresses land use policies and procedures relative to military aviation. Kern County has two military aviation installations, the China Lake Naval Air Weapons Station and Edwards AFB. Due to the military bases' required flying mission, aircraft commonly fly beyond the boundaries of the installations at supersonic speeds and sometimes as low as 200 feet above the ground. In order to minimize flight hazards to non-military aircraft, the military aircraft from these installations fly within restricted airspace known as the Joint Service Restricted R-2508 Complex, which covers approximately 20,000 square miles that extends across Los Angeles, Kern, San Bernardino, Inyo, Tulare, and Fresno counties. According to Figure 4-81 in the ALUCP, the project site is located within the geographical boundaries of the R-2508 complex.

Because of the extreme flying capabilities and needs of military aircraft, military officials have concerns about land development that may compromise the mission of the installations. Section 4.17.2 of the ALUCP identifies the types of land development that require review by the military for compatibility. These include, but are not limited to, tall obstructions that penetrate into the airspace, and developments that can cause adverse environmental effects such as reduced visibility due to particulate matter emissions. Furthermore, per Section 3.5.5 of the ALUCP, certain land use characteristics such as glare, distracting lights, or light patterns which could be mistaken for airport lights, are also not permitted within the R-2508 Complex boundary. In addition, Section 4.17.3 of the ALUCP requires that the China Lake Naval Air Weapons Station and Edwards AFB be notified of development that falls within identified notification categories. The categories that are applicable to the proposed project include the following:

- Any structure within 75 miles of the R-2508 Complex that is greater than 50 feet tall;
- Any environmental document or discretionary project within 25 miles of the R-2508 Complex; and
- Any project within 25 miles of the centerline of any route/corridor.

California City Municipal Airport

The southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. Specifically, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14).

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG) and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS) required by California’s Sustainable Communities and Climate Protection Act, of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks at 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 2018 RTP exceeds SB 375 reduction targets for the region and is consistent with the RHNA.

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; increase 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).

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.

California City General Plan

The City of California City General Plan (2009) projects conditions and needs into the future in order to determine the long-term goals and policies that would provide the basis for decision-making related to the growth and development of the City and within its existing coterminous sphere of influence. The General Plan implements the City's vision through its goals, policies, and implementation measures.

Pursuant to Government Code Section 65300, the California City General Plan consists of the following General Plan elements: Land Use, Circulation, Housing, Noise, Safety, and Conservation/Open Space. Each element establishes goals, policies, and implementation measures that guide planning decisions in the city. The goals, policies, and implementation measures relevant to the project are listed below.

The portion of the project site located south of Washburn Boulevard is within the California City General Plan area. The project parcels located in California City are designated by the General Plan as O/RA (Controlled Development & Open Space).

O/RA (Controlled Development & Open Space)

For lands designated O/RA, strong consideration shall be given to the development of park/open space and public/quasi-public uses which benefit the entire community on those parcels of land which were originally created for that purpose. The Controlled Development category also provides for industrial uses, commercial uses recreational uses, large lot subdivisions, open space uses, agricultural and horticultural uses. Very low density residential uses (one dwelling unit per twenty acres) may be developed on an interim basis. Further subdivisions of land (of parcels less than twenty acres in size) and/or the development of uses other than those specified by the General Plan would require detailed plans to be provided by the owner and/or developer of such lands.

Chapter 2. Land Use Element

Goals

- To facilitate and implement growth and development coordinated with the provision of infrastructure, public facilities, and public services.
- Accommodate new development which is compatible with and complements existing land uses within the General Plan planning area.
- Accommodate new development which is sensitive to and capitalizes on the General Plan planning area's natural environmental setting.
- Accommodate new development that is compatible with natural and manmade hazards that affect the General Plan planning area.

Policies

- The developer shall be responsible for all on-site costs incurred as a result of a proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity.
- In the areas of the City outside the central core, all developments must provide complete public infrastructure improvements including community water distribution and sewage collection and treatment systems. These developments may be permitted a density increase up to 20 percent if the developments include an affordable homes component. All land division activities shall be consistent with the provision.

Chapter 5. Open Space and Conservation Element

5.14 Open Space

Policy

- Encourage maximum cooperation among all levels of government, private interests, and individuals in the management, conservation, and protection of open space resources.

5.15 Conservation

Goals

- Promote the improvement of air quality and the maintenance of State and federal air quality standards.
- Encourage conservation of energy resources.
- Promote conservation of sensitive vegetation and wildlife.

- Promote conservation of historical and cultural resources.

Policies

- Require compliance for development projects with the requirements of the California Water Code Section 10910 regarding water supply.
- Cooperate with the Kern County Air Pollution Control District (APCD) to implement the APCD's Air Quality Attainment Plan.
- Continue to enforce the City's grading Code, along with dust control and other rules and measures through the Air Pollution Control District to mitigate air quality effects during the construction of new development.
- Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.
- Protect sensitive vegetation and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans.
- Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.

Chapter 6. Safety Element**6.5 Geologic and Seismic Hazards*****Goal***

- Protect the health, safety, and welfare of the community from hazards related to seismic activity.

Policies

- Development shall be prohibited in areas where measures to correct identified geologic or seismic hazards are not feasible.
- Minimize the potential damage to structures and loss of life that could result from earthquakes.

6.6 Flood Hazards***Goal***

- Minimize the potential for personal injuries and property damage and economical loss caused by inundation in flood hazard areas.

Policy

- Ensure that residential, commercial, industrial, and other land development is adequately protected from the hazards which occur from flooding and storm water runoff.

6.7 Human-Induced Hazards

Goal

- Protect residents, businesses, and structures from human-induced hazards related to ground transportation, aircraft over flight, hazardous materials, and other human activities.

Policy

- Ensure that hazardous materials used by commercial and industrial land uses are properly transported, handled, and used, and that information on their handling, transport, and use is available to the California City Fire Department and other safety agencies in accordance with the Fire Code.
- Require that new development proposals be consistent with the Kern County Airport Land Use Compatibility Plan in order to eliminate hazards due to land use conflicts with the California City Municipal Airport, the Mojave Airport, Edwards Air Force Base, and other military over flight activities.

6.8 Public Safety

Goals

- Provide and implement effective emergency services that will protect the health, safety, and welfare of residents and workers within the community.
- Protect the health, safety and welfare of residents, businesses, and property from fire danger.

Policies

- Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.
- Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.
- Review all new development proposals for fire safety considerations.

Chapter 7. Noise Element

Goal

- To protect residents and workers in the City from the harmful and annoying effects of exposure to excessive noise.

Policy

- Development proposals shall be reviewed for consistency with the California City Airport Land Use Compatibility Plan to reduce the potential for noise conflicts associated with the California City Municipal Airport, the Mojave Airport, and Edwards Air Force Base.

California City Zoning Regulations (Municipal Code, Title 9, Chapter 2)

Title 9, Chapter 2 of the California City Municipal Code describes permitted and conditional uses for the various zoning classifications within the city. The intent of the Zoning Regulations is to preserve, protect, and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare.

The project parcels located in California City are subject to the provisions of the California City Zoning Regulations. The project parcels located in California City have a zone classification of RA (Residential/Agriculture).

O/RA (Open Space/Residential Agriculture)

The purpose of the O/RA District is to provide living areas which combine the advantages of urban and rural location by limiting development to very low density one-family dwellings and permitting animals and fowl to be kept for pleasure or hobbies. As of May 11, 2021, the City of California City has adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use.

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 impact 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 project impacts is based on professional judgment, analysis of the County's and California City's land use policies and the significance criteria established in Appendix G of the CEQA Guidelines, which the County has determined appropriate for this EIR.

Thresholds of Significance

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

A project would have a significant impact on land use if it would:

- a) Physically divide an established community; or
- b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigating an environmental effect.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or

decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to Land Use and Planning, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.11-1: The project would physically divide an established community.

The project site is located in a rural area on undeveloped desert land. Portions of Sites 1 and 2 are located within the Fremont Interim Rural Community Plan area, which consists of predominantly of rural residential dwellings. The nearest residences in Kern County (in the community of Fremont) are located approximately 1,200 feet from the western project parcels (Site 1) and the nearest residences in California City are located approximately 3,300 feet from the southernmost project parcel. Some of the proposed routes for the collector lines would run adjacent to noise-sensitive receivers in a single-family residential neighborhood north of Phillips Road.. No new roadways or other linear elements are proposed that would have the potential to restrict existing access or movement within or otherwise physically divide the Fremont community or within California City. Therefore, the proposed project would not physically divide an established community and no impact would occur.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigating an environmental effect.

The Kern County General Plan, Fremont Interim Rural Community Plan, Kern County Zoning Ordinance, California City General Plan, California City Zoning Regulations, and ALUCP establish land use policies and regulations that are applicable to the proposed project. The following discussion evaluates the proposed project's conformity to these plans, policies and regulations.

The proposed project would require the following land use related discretionary approvals:

- a) Kern County
 1. Zone Change Case No. 14, Map No. 152 as follows:

- a. From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 174.78 acres;
 - b. From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - c. From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and,
 - d. From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
2. Issuance of Conditional Use Permit No. 28, Map No. 152 to allow for the construction and operation , within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance; and,
 3. General Plan Amendment No. 10, Map No. 152 to the Circulation Element of the Kern County General Plan to remove road reservations on section and mid-section lines within the Kern County project boundaries.
- b) California City (Responsible Agency)
1. For the parcels within city limits of California City city limits, a Conditional Use Permit (CUP) must be obtained from the City to allow for the construction and operation of a solar facility, in the O/RA (Open Space/Residential Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity (CUP 19-04). As noted previously, as of May 11, 2021, the City of California City has adopted Planning Commission Resolution No. 21-04, which updates Title 9, Chapter 2 Zoning, Article 4 of the California City Municipal Code to include solar and power generation as a conditional use. The project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2- 2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

Kern County General Plan

Table 4.11-2, *Consistency Analysis with Kern County General Plan*, presents an evaluation of the proposed project's consistency with the Kern County General Plan. The table lists the goals and policies identified above and provides analysis on the proposed 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 this EIR. As evaluated in detail in Table 4.11-2, *Consistency Analysis with Kern County General Plan*, the proposed project is generally consistent with goals and policies of the Kern County General Plan.

General Plan Amendment – Removal of Road Reservations

The proposed project involves a General Plan amendment to the Circulation Element of the Kern County General Plan to remove sections and midsection line road reservations, as shown in Figure 3-8, *Circulation Element Amendment*, in Chapter 3, *Project Description*, of this EIR. Implementation of the General Plan amendment would ensure consistency between the project and land use plan for the project area. This would allow solar panels to be placed throughout the project site to optimize the project area for the facility design, and no setbacks from midsection line future road reservations would be required. The proposed amendment would not affect property owner access to any other surrounding properties. Furthermore, it is unlikely that a road would ever be constructed once the project was in operation and would not impede traffic flow to and from the surrounding rural residential uses in the project vicinity. Therefore, with implementation of the General Plan amendment, the project would not result in conflict with the applicable land use plan for the project area, and impacts would be less than significant.

Kern County Zoning Ordinance

The project proponent is requesting a change in zone classifications for the project site from A-1 (Limited Agriculture); A-1 MH (Limited Agriculture, Mobile Home Combining); PL RS (Platted Lands, Residential Suburban Combining); PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A (Exclusive Agriculture). According to Kern County Zoning Ordinance 19.12.030, solar energy electrical facilities are permitted within the A Zone District with the approval of a CUP. Therefore, with the approval of the zone change classifications and CUP, the proposed project would be an allowable use within the A Zone District, and impacts related to consistency with the Zoning Ordinance would be less than significant.

California City General Plan

The proposed project would be consistent with applicable land use plans, policies, and regulations. Table 4.11-3, *Consistency Analysis with the California City General Plan*, presents an evaluation of the proposed project's consistency with the California City General Plan. The table lists the goals and policies identified above, and provides analysis on the proposed project's general consistency with overarching policies. As evaluated in detail in Table 4.11-3, the proposed project is generally consistent with goals and policies of the California City General Plan.

California City Zoning Regulations

At present, solar facilities are considered to be a permitted use only in industrial zoned areas in California City. The City is in the process of updating its zoning code to designate solar facilities as a compatible/permitted use in O/RA zoned districts. If deemed necessary by the City of California City, the project proponent may request a zone change from O/RA to M-1 (Light Industrial) for the portion of the facility located in California City. With the approval of the CUP, the proposed project would be an allowable use within the RA Zone, and impacts related to consistency with the California City Zoning Regulations would be less than significant.

Airport Land Use Compatibility Plan

As mentioned previously, the project site is located in the adopted Military Aviation boundaries for the ALUCP for the approximately 20,000-square-mile R-2508 Airspace Complex for Edwards Air Force Base and China Lake Naval Weapons Station. Additionally, the southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. Specifically, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). The project would be required to comply with the County’s ALUCP and applicable Federal Aviation Administration (FAA) regulations regarding project approval to ensure that there would be no conflict with airport operations and the project would not pose a safety hazard. As discussed in Section 4.9, Hazards and Hazardous Materials, implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County and California City by requiring the developer to coordinate with the Department of Defense (DoD) and obtain approval from FAA and the public airports and military installations in the area. With implementation of this mitigation measure, impacts would be less than significant. For a more detailed discussion of consistency with the ALUCP, see Section 4.9, *Hazards and Hazardous Materials*, Impact 4.9-5.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.9-3KC would be required (see Section 4.9, Hazards and Hazardous Materials, for full mitigation text).

City of California City

Implementation of Mitigation Measure MM 4.9-3CC would be required (see Section 4.9, Hazards and Hazardous Materials, for full mitigation text).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, multiple projects, including utility-scale solar and wind energy production facilities, are proposed throughout Kern County. Many are located, like the project site, in the Mojave Desert. As shown in Table 3-3, *Cumulative Project List*, 13 solar energy projects are presently under development in Eastern Kern County. The cumulative projects are (1) submitted for plan processing; (2) approved by the County of Kern; and/or (3) engaged in active construction programs. While the surrounding area is still relatively rural in nature, the proposed project would contribute to a cumulative influence on proposed land uses in and around the project site.

The anticipated impacts of the project in conjunction with cumulative development in the area of the project would increase urbanization and result in the loss of open space within the desert region of the County. 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, the project would be consistent with the goals and policies of the Kern County General Plan. As evaluated in detail in Table 4.11-3, the proposed project is consistent with goals and policies of the California City General Plan. In addition, with approval of all discretionary actions, including implementation of conditions of the CUPs, the project would be a permitted use that would not conflict with the land use designation or zoning classification for the site. Therefore, the project would not result in a cumulatively considerable impact regarding land use.

All related projects would be required to undergo environmental review, in accordance with the requirements of CEQA. Like the proposed project, each related project would also be required to demonstrate consistency with all applicable planning documents governing the project site, such as the Kern County General Plan, applicable specific plans, Kern County Zoning Ordinance, California City General Plan, and California City Zoning Regulations. Should potential impacts be identified, appropriate mitigation would be prescribed in order to reduce potential impacts to less-than-significant levels.

With regard to cumulative effects of utility-sized solar power generation facilities, there is a potential for outside factors—such as the development of newer technology, change in State or federal policy, or other economic factors—to result in the abandonment of such facilities. Unlike other facilities that, once constructed, can be retrofitted and utilized for another specific use, solar power generation facilities have little opportunity for other uses should the site not be in operation. Due to the potential for cumulative effects and impacts on surrounding land uses caused by the abandonment of multiple solar facilities in Kern County and proximate to California City, Mitigation Measures MM 4.11-1KC and MM 4.11-1CC, both relating to the decommissioning of solar facilities has been included to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. While it is the intent of Kern County to promote the use of an alternative to fossil-fuel-generated electrical power in areas of the County that are identified to have suitable characteristics for production of commercial quantities of solar PV-generated electrical power, it is necessary to protect surrounding landowners from potential impacts associated with the abandonment of such facilities. With the implementation of Mitigation Measures MM 4.11-1KC and MM 4.11-1CC, which requires a decommissioning plan and financial assurances, these cumulative land use impacts would be considered less than significant.

There is the potential that the future use of newer technology or equipment may contribute to unanticipated environmental impacts. Kern County has two military aviation installations—the China Lake Naval Air Weapons Station and Edwards Air Force Base—as well other military installations within the San Joaquin Valley. Each installation has unique flying operations, and their primary mission is to test military aircraft and weapon systems. The military has identified potential conflicts of users of the radio frequency spectrum located both on and off military installations as an area to be reviewed for compatibility issues. Operations of unmanned radio-controlled aircraft flights can have electronic interference from other sources of radio signals. Such interference problems could potentially occur throughout the desert areas where utility scale solar and other renewable energy projects are built, resulting in potentially significant cumulative impacts. Coordination of frequency and notification can mitigate this effect. Cumulative impacts involving such conflicts would be mitigated to a less than significant level with implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.9-3KC would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation text).

MM 4.11-1KC: Prior to the issuance of any building permit, the project proponent/operator shall provide the Kern County Planning and Natural Resources Department with a Decommissioning Plan for review and approval. The plan shall be carried out by the proposed operator or a County-contracted consulting firm(s) at a cost to be borne by the project proponent/operator.

- a. The Decommissioning Plan shall include, but is not limited to, the following:
 1. Factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land.
 2. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations.
 3. The assumption, when preparing the estimate, is that the project proponent/operator is incapable of performing the work or has abandoned the solar facility, thereby resulting in the County hiring an independent contractor to perform the decommission work.
- b. In addition to submittal of a Decommissioning Plan, the project proponent/operator shall post or establish and maintain with the County financial assurances related to the deconstruction of the site as identified on the approved Decommission Plan should at any point in time the project proponent/operator determine it is not in their 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:
 1. An irrevocable letter of credit;
 2. A surety bond;
 3. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommissioning plan; or
 4. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.
- c. The financial assurances documents shall include the following verbiage, including any required verbiage through Kern County Planning and Natural Resources Department's consultation and review with Kern County Counsel:

1. Financial institution or Surety Company shall give the County a minimum of 120 days' notice of intent to terminate the letter of credit or bond.
 2. Financial assurances shall be reviewed annually by the respective counties or County-contracted consulting firm(s) at a cost to be borne by the project proponent/operator to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommissioning Plan.
 3. Should the project proponent/operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.
 4. Financial institution or Surety Company shall be licensed to conduct business in the state of California.
- d. Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project proponent/operator.
 - e. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months, that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent/operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project proponent/operator may provide the County with a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Department 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.
 - f. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned.

MM 4.11-2KC: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.

City of California City

Implementation of Mitigation Measure MM 4.9-3CC would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation text).

MM 4.11-1CC: Prior to the issuance of any building permit, the project proponent/operator shall provide the California City Community Development Department with a Decommissioning Plan for review and approval. The plan shall be carried out by the proposed operator or a City-contracted consulting firm(s) at a cost to be borne by the project proponent/operator.

- a. The Decommissioning Plan shall include, but is not limited to, the following:
 1. Factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land.
 2. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations.
 3. The assumption, when preparing the estimate, is that the project proponent/operator is incapable of performing the work or has abandoned the solar facility, thereby resulting in the City hiring an independent contractor to perform the decommission work.
- b. In addition to submittal of a Decommissioning Plan, the project proponent/operator shall post or establish and maintain with the City of California City financial assurances related to the deconstruction of the site as identified on the approved Decommission Plan should at any point in time the project proponent/operator determine it is not in their 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:
 1. An irrevocable letter of credit;
 2. A surety bond;
 3. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommissioning plan; or
 4. Other financial assurances as reviewed and approved by the respective City administrative offices, in consultation with the California City Community Development Department.
- c. The financial assurances documents shall include the following verbiage, including any required verbiage through the California City Community Development Department's review:
 1. Financial institution or Surety Company shall give the City of California City a minimum of 120 days' notice of intent to terminate the letter of credit or bond.
 2. Financial assurances shall be reviewed annually by the City-contracted consulting firm(s) at a cost to be borne by the project proponent/operator to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommissioning Plan.
 3. Should the project proponent/operator deconstruct the site on their own, the City will not pursue forfeiture of the financial assurance.

4. Financial institution or Surety Company shall be licensed to conduct business in the state of California.
- d. Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by California City shall be returned to the project proponent/operator.
- e. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months, that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent/operator, by California City. Within this sixty (60) day period, the property owner, solar field owner, or project proponent/operator may provide California City a written request and justification for an extension for an additional twelve (12) months.
- f. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned.

MM 4.11-2CC: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.9-3KC, MM 4.11-1KC, and MM 4.11-2KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.9-3CC, MM 4.11-1CC, and MM 4.11-2CC, impacts would be less than significant.

Table 4.11-2. Consistency Analysis With Kern County General Plan

Goals/Policies	Consistency Determination	Project Consistency
Chapter 1, Land Use, Open Space, and Conservation Element		
1.3 Physical and Environmental Constraints		
<p>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.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.7-1KC, MM 4.9-1KC, MM 4.9-2KC, MM 4.10-1KC, and MM 4.10-2KC.</p>	<p>Seismic hazards are described and analyzed in Section 4.7, <i>Geology and Soils</i>. Mitigation Measure MM 4.7-1KC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation thereby reducing impacts to below a level of significance.</p> <p>As analyzed in Section 4.9, <i>Hazards and Hazardous Materials</i>, the project would MM 4.9-1KC and MM 4.9-2KC, which require preparation and implementing a Hazardous Materials Business Plan and application of herbicides for proper handling, storage, transport, and disposal to minimize and avoid releases of hazardous materials into the environment. As discussed in Section 4.10, <i>Hydrology and Water Quality</i>, the southern and southeastern parcels of the project site are located within the 100-year floodplain of an unnamed intermittent stream. The alteration of surface topography via ground disturbance may have the potential to alter drainage patterns such that flooding hazards could be exacerbated on-site during a rain event. However, implementation of Mitigation Measures MM 4.10-1KC and MM 4.10-2KC would require that the project proponent/operator prepare and submit both a stormwater pollution prevention plan (SWPPP) and a final hydrologic study and drainage plan, both of which would include measures to reduce any potential flood hazards as a result of the project to below a level of significance.</p> <p>Additionally, final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.</p>
<p>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</p>	<p>Consistent</p>	<p>See 1.3, <i>Physical and Environmental Constraints</i>, Goal 1, above.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>[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.</p>		
<p>Policy 2: In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria and standards for the approval of development in hazard areas.</p>	<p>Consistent</p>	<p>See 1.3, <i>Physical and Environmental Constraints</i>, Goal 1, above.</p>
<p>Policy 3: Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.</p>	<p>Consistent</p>	<p>See 1.3, <i>Physical and Environmental Constraints</i>, Goal 1, above.</p>
<p>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.</p>	<p>Consistent</p>	<p>See 1.3, <i>Physical and Environmental Constraints</i>, Goal 1, above.</p>
<p>Policy 11: Protect and maintain watershed integrity within Kern County.</p>	<p>Consistent</p>	<p>See 1.3, <i>Physical and Environmental Constraints</i>, Policy 1, above.</p>
<p>Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.</p>	<p>Consistent, with implementation of Mitigation Measure MM 4.10-1KC.</p>	<p>As described in further detail in Section 4.10, <i>Hydrology and Water Quality</i> of this EIR, the project would be designed in accordance with the Floodplain Management Ordinance, including where the facilities would be designed to maintain clearance above the maximum flood depths, and grading would not substantially increase flood depths. With</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		implementation of Mitigation Measure MM 4.10-1KC, the proposed project would be consistent with this measure.
Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Consistent, with implementation of Mitigation Measure MM 4.10-1KC.	As described in further detail in Section 4.10, <i>Hydrology and Water Quality</i> of this EIR, portions of the project are located within a 100-year floodplain, which is classified as having a 1 percent annual chance of flooding. As a result, the project will be developed in accordance with the Floodplain Management Ordinance, including where the facilities would be designed to maintain clearance above the maximum flood depths, and grading would not substantially increase flood depths. With implementation of Mitigation Measure MM 4.10-1KC, the proposed 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 4.10-1KC.	See 1.3, <i>Physical and Environmental Constraints</i> , Measure H, 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 4.10-1KC.	As described in further detail in Section 4.10, Hydrology and Water Quality of this EIR, the project involves soil disturbance activities, and is subject to compliance the Central Valley Region of the California Regional Water Quality Control Board Water Quality Order No. R5-2016-0040 (NPDES General Permit NO. CAS0085324) Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4s) MS4 permit, which requires projects to comply with the State Water Resources Control Board’s Construction General Permit. With implementation of Mitigation Measure MM 4.10-1KC, the proposed project would be consistent with this measure.
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 4.13-2KC.	As discussed in Section 4.13, <i>Public Services</i> , of this EIR, implementation of Mitigation Measure MM 4.13-2KC would ensure that the project operator pay an annual fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facility in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded.
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	As discussed in Section 4.16, <i>Utilities and Service Systems</i> and evaluated in the project Water Supply Analysis (<i>Appendix N</i>), the project water supply would be supplied via one or more of the following sources: an on-site or off-site groundwater well pumping water from the Fremont Valley Groundwater Basin, or through a local retailer sourced by AVEK. By having the options of obtaining water from multiple sources, impacts related to water supply would be less than significant. The project would be consistent with this goal.
Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.	Consistent, with implementation of Mitigation Measure MM 4.13-2KC.	See 1.4, <i>Public Facilities and Services</i> , 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 time of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.	Consistent, with implementation of Mitigation Measure MM 4.13-2KC	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent	Impacts to utilities are evaluated in Section 4.16, <i>Utilities and Service Systems</i> , of this EIR. This EIR serves to comply with this policy, and the project proponent/operator would coordinate with the applicable utility service providers if/when project construction/operation demands.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Implementation Measure C, above.
Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the	Consistent	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
County shall not be approved unless adequate fire protection facilities and resources can be provided.		
1.5 Special Treatment Areas		
<p>Goal 1: To recognize the validity of existing Specific Plan and Rural Community Plan decisions and to identify areas for which similar detailed planning efforts should be undertaken in the future so as to best meet the needs and concerns of local residents.</p>	Consistent	<p>The project would not inhibit the County’s ability to recognize the validity of existing Specific Plan and Rural Community Plan decisions and to identify areas for which similar detailed planning efforts should be undertaken in the future so as to best meet the needs and concerns of local residents.</p> <p>Additionally, final review and approval of the proposed project by the Kern County Planning and Natural Resources Department would ensure that the proposed project would not conflict with the goals and policies of the Fremont Interim Rural Community Plan.</p>
<p>Policy 3: Rural communities are historically identifiable small-scale non-urban settlements located in outlying areas of the County which contain a mixture of residential and supportive commercial and other uses serving the community and the surrounding rural population. The County will ensure that the unique character of these communities is preserved and enhanced by recognizing the scale, density, size, and composition of development.</p>	Consistent	<p>The project would not inhibit the County’s ability to ensure that the unique character of rural communities is preserved and enhanced by recognizing the scale, density, size, and composition of development.</p> <p>Additionally, final review and approval of the proposed project by the Kern County Planning and Natural Resources Department would ensure that the proposed project would not conflict with the goals and policies of the Fremont Interim Rural Community Plan.</p>
1.9 Resources		
<p>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.</p>	Consistent	<p>The project site is not within a mineral recovery area or within a designated mineral and petroleum resource site designated by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation’s State Mining and Geology Board. The project site is not located within the County’s NR (Natural Resources) or PE (Petroleum Extraction) Zone Districts. The project site is not designated by the California Department of Conservation (CDOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The project will not impair or diminish these resources.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Goal 3: Ensure the development of resource areas minimize effects on neighboring resource lands.	Consistent	The project does not involve development of mineral, petroleum, or agricultural resources. The project involves development of a solar facility that is compatible with resource management land uses.
Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.	Consistent	Consistent with this policy, the proposed project involves the development of solar PV power generating facility designed to produce up to 500 megawatts (MW) and 600 MW hours (MWh) of 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. The discretionary review and final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.
Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent	Consistent with this policy, the proposed project is the development of solar PV power generating facilities designed to produce up to 500 MW of solar power and 600 MWh of energy storage. As discussed in environmental resource areas addressed in this EIR, including Section 4.3, Air Quality, Section 4.4, Biological Resources, and Section 4.10, Hydrology and Water Quality , the project would implement mitigation measures and be required to adhere to applicable local, state and federal regulations intended to protect the environment. Therefore, the project would develop a clean energy source that would create fewer fossil fuel emissions while protecting the environment.
Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.	Consistent	Impacts on natural resources are avoided or minimized through the design of the project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources.
Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and	Consistent with implementation of Mitigation Measure MM 4.10-2KC.	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

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
silt deposition through utilization of grading and flood protection ordinances.		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 features such as drainage swales for collection of runoff prior to off-site discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. As discussed in Section 4.10, Hydrology and Water Quality , the proposed project could require the inclusion of retention basins to meet County drainage requirement. Consistent with this policy, the proposed project would require the submission of a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-2KC, which requires a final hydrologic drainage plan designed to evaluate and minimize potential increases in runoff from the project site.
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 500 MW of solar power and 600 MWh of energy storage. Consistent with this policy, the proposed project would generate solar energy and offset an equivalent amount of fossil fuel-generated electrical power.
Policy 19: Work with other agencies to define regulatory responsibility concerning energy-related issues.	Consistent	This project would not prevent the ability of the County to work with other agencies to define energy-related issues.
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 Measures MM 4.9-1KC through 4.9-3KC, and MM 4.13-2KC.	Consistent with this goal, the proposed project would implement a solar PV generating facility, which would provide a long-term development in the region. The project has a low water demand and would result in little noise and air emissions. As discussed in Section 4.2, Agricultural Resources , and Section 4.7, Geology and Soils , of this EIR, the project is not located in an area of agricultural or mineral resources. As discussed in Section 4.13, Hazards and Hazardous Materials , the project’s potential impacts with respect to hazardous materials would be less than significant. As discussed in Section 4.13, Public Services , of this EIR, implementation of Mitigation Measure MM 4.13-2KC would ensure that the project operator pay an

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		annual fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facility in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With implementation of the aforementioned mitigation measures, the project is consistent with this goal.
1.10.1 Public Services and Facilities		
Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.	Consistent, with implementation of Mitigation Measure MM 4.13-2KC.	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above.
Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent, with implementation of Mitigation Measure MM 4.13-2KC.	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above.
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. Project impacts to police and fire services would be less than significant, with fee payment required by Mitigation Measure 4.13-2KC.	See 1.4, <i>Public Facilities and Services</i> , Goal 1, 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 Environmental 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 characterizes the quality of upper groundwater in the project	Consistent	Soil characteristics and percolation related to proposed on-site septic systems are addressed in Section 4.7, <i>Geology and Soil</i> , and water and wastewater impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , and Section 4.17, and <i>Utilities and Service Systems</i> of this EIR. The proposed project would require a septic system to be built within the O&M facility to provide non-potable water for the estimated up to 20 full-time employees. The septic system would be designed in accordance with soil percolation characteristics of the project area and would be constructed in accordance with Kern County Department of Public Health requirements. No off-site sewage or disposal connections to a municipal

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>vicinity and evaluation of the extent to which, if any, the proposed use of alternative septic systems will adversely impact groundwater quality. If the evaluation indicates 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 shall be required to supply sewage collection, treatment and disposal facilities.</p>		<p>sewer system exist or are proposed. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, State, and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.</p>
<p>1.10.2 Air Quality</p>		
<p>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.</p>	<p>Consistent, with implementation of Mitigation Measure MM 4.3-1KC, MM 4.3-2KC, MM 4.3-3KC, and MM 4.3-4KC.</p>	<p>Air quality impacts are evaluated in Section 4.3, Air Quality, of this EIR. As demonstrated in Section 4.3, the project would implement several measures to reduce project impacts on air quality. Mitigation Measures MM 4.3-1KC through MM 4.3-4KC requires the project operator to implement dust control measures during construction and operations and manage construction equipment in accordance with EKAPCD’s rules and regulations and state standards, and would further reduce air quality impacts from fugitive dust, diesel, and NOx emissions.</p>
<p>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:</p> <ul style="list-style-type: none"> a. All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and b. 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 	<p>Consistent, with implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC.</p>	<p>As discussed above and in Section 4.3 of this EIR, the project would implement several measures to reduce project impacts on air quality. Mitigation Measures MM 4.3-1KC through MM 4.3-3KC requires the project operator to implement dust control measures during construction and operations and manage construction equipment in accordance with EKAPCD’s rules and regulations and state standards, and would further reduce air quality impacts from fugitive dust, diesel, and NOx emissions. The project also proposes MM 4.3-5KC, MM 4.3-6KC, and MM 4.3-7KC to address COVID-19 and Valley Fever. Due to the uncertainty of the project’s regional and localized health impacts associated with criteria air pollutants, such as PM_{2.5} along with possible indirect linkages of criteria pollutants and COVID-19, the project will require a finding in a statement of overriding consideration that will consider factual evidence on the project effects.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
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	See 1.10, <i>General Provisions</i> , Policy 18, above.
Policy 21: The County shall support air districts' efforts to reduce PM ₁₀ and PM _{2.5} emissions.	Consistent	See 1.10, <i>General Provisions</i> , Policy 18, above.
Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.	Consistent	See 1.10, <i>General Provisions</i> , Policy 18, above.
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 Eastern Kern Air Pollution Control District for review and comment.
Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to: a. Minimizing idling time. b. Electrical overnight plug-ins.	Consistent, with implementation of Mitigation Measures MM 4.3-2KC.	Air quality impacts are evaluated in Section 4.3, Air Quality , of this EIR. Consistent with this measure, implementation of Mitigation Measure MM 4.3-2KC would require diesel exhaust reduction strategies.
Measure H: Discretionary projects may use one or more of the following to reduce air quality effects: a. Pave dirt roads within the development. b. Pave outside storage areas.	Consistent, with implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-3KC.	Project impacts to air quality, including PM ₁₀ , are analyzed in Section 4.3, Air Quality , of this EIR. While the specified items under this measure are generally not applicable to a utility-scale solar project such as this project, the project would implement Item (j), other strategies that may be recommended by the local Air Pollution Control District. As identified in Mitigation Measures MM 4.3-1KC and MM 4.3-3KC, the project would implement practices recommended by the EKAPCD for fugitive dust control, in accordance with EKAPCD Rule 402 measures. With

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<ul style="list-style-type: none"> 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 		<p>implementation of Mitigation Measure MM 4.3-1KC and MM 4.3-3KC, the project would be consistent with this measure.</p>
<p>Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.</p>	<p>Consistent, with implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-4KC.</p>	<p>Project impacts to air quality, including PM₁₀, are analyzed in Section 4.3, Air Quality, of this EIR. The project would control PM₁₀ emissions through Mitigation Measures MM 4.3-1KC, which prescribes road speed, road and ground stabilization, watering, limitations on ground disturbance activities, haul truck requirements, etc., during on-site work activities; and MM 4.3-2KC, which limits worker roundtrips and thereby reduce PM₁₀ emission from commuter vehicles. With implementation of Mitigation Measures MM 4.3-1KC and MM 4.3-2KC, the project would be consistent with this measure.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
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 4.5-1KC through MM 4.5-12KC	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. The project would comply with this policy through the implementation of Mitigation Measures MM 4.5-1 through MM 4.5-12, all of which ensure the preservation of known and unknown cultural and historic resources.
Measure K: Coordinate with the California State University, Bakersfield’s Archaeology Inventory Center.	Consistent, with implementation of Mitigation Measures MM 4.5-3KC through MM 4.5-11KC.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. Consistent with this measure, copies of the reports will be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield, as indicated in Mitigation Measures MM 4.5-3 through MM 4.5-11.
Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).	Consistent, with implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-12KC.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR and associated measures serve to comply with this measure.
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 4.7-3KC through MM 4.7-6KC.	Paleontological resources are analyzed in Section 4.7, <i>Geology and Soils</i> , of this EIR. While no known paleontological resources have been identified at the project sites, portions of the project area have a high potential to contain paleontological resources. As a result, the project would implement Mitigation Measures MM 4.7-3 through MM 4.7-6, which require measures to train, monitor, protect, and evaluate potentially encountered fossils. With implementation of the mitigation measures, the project would be consistent with this measure.
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 resources are evaluated in Section 4.15, <i>Tribal Cultural Resources</i> , of this EIR. The County maintains a Master List of Native American Tribes, which included the NAHC’s provided a contact list of Native American Tribes affiliated with the project site. On September 23, 2019, the County sent consultation notification letters via certified mail to Native American groups on the County’s Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. Consistent with this measure, notification regarding the

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		proposed project would be conducted in accordance with the established procedures for discretionary projects and CEQA documents.
<p>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.</p>	<p>Consistent, with implementation of Mitigation Measures MM 4.5-1, MM 4.5-2, and 4.5-10.</p>	<p>Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i>, of this EIR. This EIR serves to comply with this measure and includes Mitigation Measures MM 4.5-1, MM 4.5-2 and MM 4.5-10, which would require Native American monitoring and consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the proposed project.</p>
<p>1.10.5 Threatened and Endangered Species</p>		
<p>Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-21.</p>	<p>Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i>, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation (see Section 4.4 for details). Additionally, the proposed project would be developed and operated in accordance with all local, state and federal laws pertaining to the protection of threatened and endangered plant and wildlife species.</p>
<p>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.</p>	<p>Consistent</p>	<p>Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i>, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation. As part of the biological resources evaluation and habitat assessment conducted for the proposed project, relevant state and federal agencies were contacted to ensure that appropriate information about the project sites was 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 proposed project.</p>
<p>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.</p>	<p>Consistent</p>	<p>See 1.10.5, <i>Threatened and Endangered Species</i>, Policy 28, above.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>Policy 32: Riparian areas will be managed in accordance with United States Army Corps of Engineers (USACE), and the California Department of Fish and Game rules and regulations to enhance drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.4-22 and MM 4.4-23.</p>	<p>Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i>, of this EIR. The project area does not have surface connectivity to a traditionally navigable water, and therefore, none of the features present at the project site would be subject to the jurisdiction of USACE. Two types of features that may be subject to the jurisdiction of the RWQCB and CDFW were delineated during field surveys: one intermittent stream and one playa. In addition, three ephemeral streams previously mapped in the Eland 1 Solar Farm Preliminary Jurisdictional Waters/Wetlands Delineation Report (Stantec 2018) occur within the project area. Approximately 0.292 acres of potentially jurisdictional features are located within the project area. Construction activities from the proposed project could permanently impact these potentially jurisdictional features as a result of grading and construction of the solar facility, including supporting infrastructure. If complete avoidance of jurisdictional waters is not feasible, impacts to jurisdictional areas would be considered significant but mitigatable through implementation of Mitigation Measures MM 4.4-22 and MM 4.4-23.</p>
<p>Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.</p>	<p>Consistent</p>	<p>Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i>, of this EIR. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA.</p>
<p>Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.4-1 through 4.4-24.</p>	<p>Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i>, of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the California Department of Fish and Wildlife. The County has and will respond to all comments from reviewing agencies during the CEQA process.</p>
<p>1.10.6 Surface Water and Groundwater</p>		
<p>Policy 34: Ensure that water quality standards are met for existing users and future development.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.9-1 and MM 4.10-1.</p>	<p>Water quality impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i>, of this EIR. Consistent with this policy, the proposed project would implement best management practices during construction to avoid impacts to water quality. As identified in Section 4.11, <i>Hazards and Hazardous Materials</i>, the project would also implement MM 4.9-1, to prepare a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater on-site, thereby maintaining the integrity of the watershed.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent	See 1.4, Public Facilities and Services, Goal 5, above.
Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	Consistent	Drainage plans and associated impacts are discussed in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. Consistent with this policy, final project design would be required to conform to the Kern County Development Standards and Grading Ordinance. This would be confirmed during final plot plan review by the Kern County Planning and Natural Resources Department.
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, to prevent the degradation of the watershed to the extent practical.	Consistent with implementation of Mitigation Measure MM 4.10-1	The project would not result in any significant unavoidable impacts to the watershed during construction and operation. Implementation of Mitigation Measure MM 4.10-1 would require the project proponent/operator to implement a SWPPP to control for the potential for polluted stormwater impacting the watershed. Refer to Section 4.10, <i>Hydrology and Water Quality</i> , for a complete discussion on potential watershed impacts resulting from the proposed project.
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.	Consistent.	See 1.4, Public Facilities and Services, Goal 5, above.
1.10.7 Light and Glare		
Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measure MM 4.1-3 through MM 4.1-5.	Aesthetic impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR. Implementation of Mitigation Measures MM 4.1-3 through MM 4.1-5 would minimize light glare impacts to below a level of significance.
Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent	See 1.10.7, <i>Light and Glare</i> , Policy 47, above.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/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.	Refer to 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, above.
2.3.3 Highways Plan		
Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.	Consistent	Section 4.15, <i>Traffic and Transportation</i> , of this EIR provides a discussion of County circulation consistency. The project involves a General Plan Amendment to the Circulation Element to remove sections and midsection line road reservations, as shown in Figure 3-8. The road reservations are located within the project area, and would not affect circulation patterns in the surrounding properties. With the approved General Plan Amendment, the project would be consistent with this policy.
2.3.4 Future Growth		
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.	Consistent	As stated in Section 3, <i>Project Description</i> , construction and operation traffic would access the project site from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site. Driveways and parking lot entrances would be constructed in accordance with Kern County improvement standards. Any off-site roadway improvements would be constructed in conformance with Caltrans and/or County codes and regulations, as necessary and applicable.
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	Consistent	Consistent with this policy, the project proponent would fund improvements to driveways that provide access to any County, city, or State roads.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
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.	Consistent	As part of the project approval process, the County may include the developer's road(s) into the county's maintained road system. Any off-site roadway improvements would be constructed in conformance with Caltrans and/or County codes and regulations, as necessary and applicable.
2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements		
Goal 1: Provide a means for guiding decisions on vacating public roads.	Consistent	As discussed in Chapter 3, Project Description , of this EIR, the project has requested approval of a General Plan Amendment to the Circulation Element of the Kern County General Plan, to eliminate future road reservations, and has requested vacations of public access easements; those requests are subject to approval by the Kern County Board of Supervisors. With the approval of the aforementioned requests for General Plan Amendments and non-summary vacations of public access easement, the proposed project would be consistent with this goal.
Goal 2: Kern County intends to set up a system maintaining and coordinating road vacation procedures in all elements of the General Plan and the incorporated cities general plans.	Consistent	As discussed in Chapter 3, Project Description , of this EIR, the project has requested approval of General Plan Amendments to the Circulation Element for the removal of section and mid-section line road reservations within the County and within California City. These areas are not currently improved. The purpose of the request is to facilitate the optimal layout of solar panels by removing unused and unrecorded road reservations on vacant land. These would not eliminate any legal access for any property or persons in the area. No vacations of any existing roadway rights-of-ways or easements would occur.
Policy 2: Provide a means for guiding decisions on vacating public roads. A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed	Consistent	See 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.		
Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.</p>		
<p>Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.</p>	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
<p>Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.</p>	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
<p>Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.</p>	Consistent	No road vacations are proposed; see 2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 2, above.
<p>2.3.10 Congestion Management Programs</p>		
<p>Goal 1 To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.</p>	Consistent	As analyzed in Section 4.14, <i>Transportation</i> , during construction, all multilane highway study segments potentially affected by the project would operate at an acceptable LOS C or better, and the project would not degrade the LOS to an unacceptable level. The LOS for the two-lane highway segment (SR 14 near MP 57.77) is expected to continue to operate at LOS D under the worst-case construction traffic scenario as the project would not be expected to add more than 3,000 vehicles, which is the additional

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		<p>volume that would be required to cause LOS E. During operations, the project would not cause a decrease in the LOS of any area intersection. As such, project operation would not result in a conflict with the County’s General Plan or regional plans supporting vehicular transportation modes. The project would be in conformance with adopted policies, plans, and programs pertaining to the local and regional circulation system and would not otherwise decrease the performance or safety of such facilities.</p>
2.5.1 Trucks and Highways		
<p>Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.</p>	<p>Consistent</p>	<p>Traffic impacts are evaluated in Section 4.15, Transportation, of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards, which would ensure the provision of heavy truck transportation resulting from project implementation, in the safest way possible.</p>
<p>Goal 2: Reduce potential overweight trucks.</p>	<p>Consistent</p>	<p>See 2.5.1, <i>Trucks and Highways</i>, Goal 1, above.</p>
<p>Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.</p>	<p>Consistent</p>	<p>See 2.5.1, <i>Trucks and Highways</i>, Goal 1, above.</p>
<p>Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.</p>	<p>Consistent</p>	<p>As discussed in Section 4.15, Transportation of this EIR, coordination and consultation with Caltrans is ongoing throughout the project’s lifetime, consistent with this policy.</p>
2.5.2 Airport Land Use Compatibility Plan		
<p>Goal 1: Plan for land uses that are compatible with public airport and military bases and mitigate encroachment issues.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.9-3KC and MM 4.11-2KC.</p>	<p>The project site is located in the adopted Military Aviation boundaries for the ALUCP for the R-2508 Airspace Complex for Edwards Air Force Base and China Lake Naval Weapons Station. Additionally, the southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. Specifically, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway.” However, the project would not introduce any habitable structures or other development that would be incompatible with the project site’s location within the ALUCP’s area. Furthermore, the project would be required to comply with the County’s ALUCP and applicable FAA regulations regarding project approval to ensure that there</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		<p>would be no conflict with airport operations and no safety hazards are presented. Implementation of Mitigation Measure MM 4.9-3KC would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County and California City by requiring the developer to coordinate with the DoD and obtain approval from FAA and the public airports and military installations in the area. With implementation of this mitigation measure, impacts would be less than significant.</p> <p>Kern County has two military aviation installations—the China Lake Naval Air Weapons Station and Edwards Air Force Base—as well other military installations within the San Joaquin Valley. The military has identified potential conflicts of users of the radio frequency spectrum located both on and off military installations as an area to be reviewed for compatibility issues. Operations of unmanned radio-controlled aircraft flights can have electronic interference from other sources of radio signals. Coordination of frequency and notification can mitigate this impact. The project impacts are considered significant, but would be reduced to a less than significant level with implementation of Mitigation Measure MM 4.11-2KC.</p>
<p>Policy 2: To the extent legally allowable, prevent encroachment on public airport and military base operations from incompatible, unmitigated land uses.</p>	<p>Consistent</p>	<p>See 2.5.2, <i>Airport Land Use Compatibility Plan</i>, Goal 1, above.</p>
<p>Measure A: Review discretionary land use development applications within the airports influence area and the military base operating area as shown in the ALUCP for consistency.</p>	<p>Consistent, with implementation of Mitigation Measure MM 4.9-3KC.</p>	<p>See 2.5.2, <i>Airport Land Use Compatibility Plan</i>, Goal 1, above.</p>
<p>Measure B: Coordinate and cooperate with airport operators, the County Department of Airports, the California Department of Transportation, Division of Aeronautics, affected cities, Edwards Air Force Base, NAWS China Lake and the Department of Defense on the ALUCP, review of land use applications, public education and encroachment issues.</p>	<p>Consistent, with implementation of Mitigation Measures MM 4.9-3KC and MM 4.11-2KC.</p>	<p>See 2.5.2, <i>Airport Land Use Compatibility Plan</i>, Goal 1, above.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Chapter 3, Noise Element		
Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	Consistent with implementation of Mitigation Measures MM 4.12-1KC and MM 4.12-2KC.	Noise impacts are evaluated in Section 4.12, <i>Noise</i> , of this EIR. With implementation of Mitigation Measures MM 4.12-1KC and MM 4.12-2KC, project-related noise would not exceed the County’s thresholds, and 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	The proposed solar power facility would be compatible with surrounding roadways, rail lines, airport, and test track uses.
Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	Consistent	See Chapter 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 Chapter 3.3, Sensitive Noise Areas, Goal 1, above.
Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent	See Chapter 3.3, Sensitive Noise Areas, Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.12 , <i>Noise</i> , of this EIR.
Policy 5: Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels: a. 65 db-Ldn or less in outdoor activity areas. b. 45 db-Ldn or less within living spaces or other noise sensitive interior spaces.	Consistent	See Chapter 3.3, Sensitive Noise Areas, Goal 1, above.
Policy 7: Employ the best available methods of noise control.	Consistent	See Chapter 3.3, Sensitive Noise Areas, Goal 1, above.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>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.</p>	<p>Consistent</p>	<p>Consistent with this measure, the proposed project will be reviewed for conformance with the policies outlined in this element.</p>
<p>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.</p>	<p>Consistent</p>	<p>See 3.3, Sensitive Noise Areas, Goal 1 and Measure A, of the Kern County General Plan.</p>
<p>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:</p> <ul style="list-style-type: none"> a. Be the responsibility of the applicant b. Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics. c. Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project. 	<p>Consistent</p>	<p>Consistent with this measure, the project proponent prepared an acoustical analysis (<i>Appendix L</i> of this EIR) in accordance with the requirements of Chapter 3, Noise Element, Measure G, of the Kern County General Plan.</p>
<p>Measure I: Noise analyses shall include recommended mitigation, if required, and shall:</p> <ul style="list-style-type: none"> a. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions. 	<p>Consistent</p>	<p>Consistent with this measure, a noise assessment was conducted for the proposed project and is referenced in Section 4.12, Noise, and provided in <i>Appendix L</i> of this EIR. In accordance with this measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of CNEL, and estimates of noise exposure.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>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.</p> <p>c. Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.</p> <p>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.</p>		
<p>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.</p>	<p>Consistent</p>	<p>Consistent with this measure, the recommendations and requirements imposed pursuant to the findings of the acoustical analysis would be included with project implementation.</p>
<p>Chapter 4, Safety Element</p>		
<p>Goal 1: Minimize injuries and loss of life and reduce property damage.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.13-1KC.</p>	<p>Consistent with this goal, the proposed project would be required to comply with adopted safety regulations, such as the Fire Code, and related policies in the General Plan. Additionally, Mitigation Measure MM 4.13-1KC, would ensure that the project proponent/operator implement a fire safety plan for use during construction, operation and decommissioning of the project, thereby reducing the risk of impacts to workers, residents, and businesses in the unlikely event of an on-site fire.</p>
<p>Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.</p>	<p>Consistent</p>	<p>Impacts on emergency services and facilities as a result of the project have been analyzed and are discussed in Section 4.13, <i>Public Services</i>, of this EIR.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>Policy 2: The County will encourage the promotion of public education about fire safety at home and in the work place.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.13-1KC.</p>	<p>The proposed project would not interfere or prohibit the County’s ability to meet this policy. Mitigation Measure MM 4.13-1KC, would ensure that the project proponent/operator implement a fire safety plan for use during construction, operation and decommissioning of the project, thereby reducing the risk of impacts to workers, residents, and businesses in the unlikely event of an on-site fire.</p>
<p>Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.</p>	<p>Consistent</p>	<p>See Chapter 4, <i>Safety Element</i>, Policy 2, above.</p>
<p>Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.14-1KC.</p>	<p>Transportation impacts, including emergency access, are analyzed in Section 4.14, <i>Traffic and Transportation</i>, of this EIR. Per Mitigation Measure MM 4.14-1KC, the project would include the implementation of a Traffic Control Plan during construction of the PV solar facility, so that fire equipment and emergency services are able to access each site.</p> <p>During project operation, the proposed project would not affect emergency access to the project site or any other surrounding location nor would the proposed project require closures of public roads, which could inhibit access by emergency vehicles. Additionally, the project would not include any residential or associated development intended for permanent occupancy and, as such, would not inhibit the evacuation of residents in the unlikely event of an emergency at the project site (see Section 4.14 for details).</p>
<p>Policy 5: Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.13-1KC.</p>	<p>The proposed project would not include development of housing or other habitable structures and would not include a site located in very high fire hazard severity zone. The project site is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. Additionally, the project operator would develop and implement a fire safety plan for use during construction and operation (Mitigation Measure MM 4.13-1KC). This plan would address the marking of roads. See Sections 4.17, <i>Wildfire</i>, and 4.13, <i>Public Services</i>, of this EIR.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	Consistent	Consistent with this policy, the proposed project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department.
Measure A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor’s action could involve the establishment of a land use activity susceptible to such hazards.	Consistent	Section 4.7, <i>Geology and Soils</i> , of this EIR, discusses potential geologic hazards, Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, discusses potential flood hazards, and Section 4.18, <i>Wildfire</i> , of this EIR discusses potential fire hazards as a result of project implementation. Consistent with 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 measure, the California Multi-Hazard Mitigation Plan, as well as the Kern County Multi-Hazard Mitigation Plan were used as source documents and considered in the evaluation of hazards in this EIR. Refer to Section 4.9, <i>Hazards and Hazardous Materials</i> .
4.3. Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure		
Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	Consistent	While not located in a significant geologic hazard area, geological and soils engineering investigations were performed for the project, which are described in more detail in Section 4.7, <i>Geology and Soils</i> of this EIR. The project is consistent with this measure.
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	While not located within the project area, the fault zones designated in the Kern County Seismic Hazard Atlas are considered significant geologic hazard areas in this EIR. Refer to Section 4.7, <i>Geology and Soils</i> of this EIR for more detail. The project is consistent with this measure.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
4.5 Landslides, Subsidence, Seiche, and Liquefaction		
Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent, with implementation of Mitigation Measure MM 4.7-1KC.	As discussed in Section 4.7, <i>Geology and Soils</i> , conditions for landslides are also not present at the project sites, which are characterized by relatively flat, with a topographic gradient less than 2 percent. 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 and implementation of Mitigation Measure MM 4.7-1KC would ensure that effects from seismic-related ground failure including liquefaction would be minimized. Shallow groundwater is not expected on the proposed project site and the site is not within an earthquake zone of required investigation for liquefaction. See Section 4.7, <i>Geology and Soils</i> .
4.6 Wildland and Urban Fire		
Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.	Consistent	Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.13, <i>Public Services</i> , of this EIR.
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 Measures MM 4.13-1KC and MM 4.13-2KC.	The project would not interfere or prohibit the County’s ability to meet this policy. Mitigation Measure MM 4.13-1KC requires the proponent to develop a fire safety plan for use during construction and operational activities, and all on-site employees would be trained on fire safety and how to respond to on-site fires, should they occur. Additionally, Mitigation Measure MM 4.13-2KC require impact fees for public services. See Sections 4.9, <i>Hazards and Hazardous Materials</i> , and 4.13, <i>Public Services</i> , and 4.17, <i>Wildfire</i> , of this EIR for further details.
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 4.14-1KC.	Section 4.14, <i>Transportation</i> , of this EIR includes Mitigation Measure MM 4.14-1KC 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 4.13-1KC.	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, with implementation of Mitigation Measure MM 4.13-1KC.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>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.</p>	<p>Consistent, with implementation of Mitigation Measures MM 4.13-1KC and MM 4.13-2KC.</p>	<p>Consistent with this measure, the proposed project would implement Mitigation Measure MM 4.13-1KC, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. Additionally, the project would implement Mitigation Measure MM 4.13-2KC, which prescribes project impact fees to compensate the county for public services resulting from project construction and operation.</p>
<p>4.9 Hazardous Materials</p>		
<p>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.</p>	<p>Consistent, with implementation of Mitigation Measure MM 4.13-1KC.</p>	<p>See 4.6, <i>Wildland and Urban Fire</i>, Policy 6, above</p>
<p>Chapter 5, Energy Element</p>		
<p>5.2 General Policies</p>		
<p>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.</p>	<p>Consistent</p>	<p>See 1.10.5, Threatened and Endangered Species, Policy 28, above.</p>
<p>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.</p>	<p>Consistent</p>	<p>See 3.3, Sensitive Noise Areas, Goal 1, above.</p>
<p>5.4.5 Solar Energy Development</p>		
<p>Goal 1: Encourage safe and orderly commercial solar development.</p>	<p>Consistent</p>	<p>Consistent with this goal, the proposed project would develop a solar PV facility that would generate 500 MW of solar energy and 600 MWh of energy storage and offset an equivalent amount of fossil fuel-generated electrical power. The site is on privately owned land, which has been previously disturbed. The proposed project would be designed in</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		compliance with all applicable regulations and requirements (i.e., Zoning Ordinance, Grading Ordinance, and Floodplain Management Ordinance) to ensure a safe and orderly development of the solar facility.
Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.	Consistent	Consistent with this policy, the proposed project would develop a solar PV facility capable of generating 500 MW of solar energy and 600 MWh of energy storage and would offset an equivalent amount of fossil fuel-generated electrical power in the desert region of Kern County, on a previously disturbed site. Operation of the proposed project would improve air quality within the County and assist the County in meeting attainment goals. See Section 4.3, <i>Air Quality</i> , of this EIR.
Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	Consistent	Consistent with this policy, the project proposes the development of a PV power generation facility in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.
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 with implementation of Mitigation Measures MM 4.4-1KC through 4.4-23KC.	Consistent with this policy, the project proposes the development of a PV power generation facility in the desert region of Kern County, on a previously disturbed site. As discussed in Section 4.4, <i>Biological Resources</i> , potential impacts to biological resources could be reduced to less-than-significant levels with implementation of Mitigation Measures MM 4.4-1KC through 4.4-23KC.
Policy 7: The processing of all discretionary energy project proposals shall comply with the State CEQA Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.	Consistent	As demonstrated throughout this EIR, the project’s potential impacts on the environment have been analyzed under CEQA, and the project’s approval will be at the discretion of the Lead Agency, the Kern County Planning and Natural Resources Department, pursuant to CEQA.
Policy 8: The County should work closely with local, State, and Federal agencies to ensure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts on fish, wildlife, and botanical resources, wherever practical.	Consistent	See 5.4.5, <i>Solar Energy Development</i> , Policy 4.

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>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.</p>	<p>Consistent</p>	<p>See Chapter 3.3, Sensitive Noise Areas, Goal 1.</p>
<p>Measure B: The County should work with affected State and federal agencies and interest groups to establish consistent policies for solar energy development.</p>	<p>Consistent</p>	<p>The project would not inhibit the County’s ability to work with affected State and federal agencies and interest groups to establish consistent policies for solar energy development.</p>
<p>5.4.7 Transmission Lines</p>		
<p>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.</p>	<p>Consistent</p>	<p>Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project’s transmission lines would not pose significant environmental or public health and safety hazards.</p>
<p>Policy 1: The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County’s residents and access the County’s generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.</p>	<p>Consistent</p>	<p>The proposed project is the development of a PV facility that would access the County’s solar resource. The potential project substation locations have been reviewed as part of this EIR, and potentially significant impacts are subjected to mitigation measures to reduce effects to less than significant levels. Additionally, adherence to all applicable local, state and federal regulations, would ensure that the proposed project transmission line and substation facilities would not pose significant environmental or public health and safety hazards.</p>
<p>Policy 2: The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.</p>	<p>Consistent</p>	<p>See 5.4.7, <i>Transmission Lines</i>, Policy 1, above.</p>
<p>Policy 3: In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.</p>	<p>Consistent</p>	<p>See 5.4.7, <i>Transmission Lines</i>, Policy 1, above.</p>

Table 4.11-2. Consistency Analysis With Kern County General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Policy 4: The County should work with other agencies in establishing routes for proposed transmission lines.	Consistent	Consistent with this policy, the proposed project would require coordination with the Los Angeles Department of Water and Power to connect into existing facilities.
Policy 5: The County should discourage the siting of above-ground transmission lines in visually sensitive areas.	Consistent	Aesthetics impacts are evaluated in Section 4.1, <i>Aesthetics</i> . As described in Section 4.1, the introduction of the solar fields would significantly alter the visual character of the project site. However, due to the existing visual character and quality of the site and surrounding area, project-related aesthetic impacts would be less than significant.
Policy 6: The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.	Consistent	Project impacts to biological resources, including raptor safety and transmission lines, are analyzed in Section 4.4, <i>Biological Resources</i> . Mitigation Measure MM 4.4-21 requires avian safety specifications to be incorporated into the transmission facility design. With implementation of Mitigation Measure MM 4.4-21, the project would be consistent with this policy.
Measure A: The County should monitor the supply and demand of electrical transmission capacity locally and statewide.	Consistent	Consistent with this measure, the proposed project is the development of solar PV power generating facilities. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus protecting the environment.
Measure B: The County shall continue to maintain provisions in the Zoning Ordinance.	Consistent	Impacts on natural resources are avoided or minimized through the design of the project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources and would not conflict with the Kern County Zoning Ordinance.

Table 4.11-3. Consistency Analysis with the City of California City General Plan

Goals/Policies	Consistency Determination	Project Consistency
Chapter 2, Land Use Element		
<p>Goal: To facilitate and implement growth and development coordinated with the provision of infrastructure, public facilities, and public services.</p>	<p>Consistent, with implementation of Mitigation Measure MM 4.13-2CC.</p>	<p>Public services and facilities are evaluated in Section 4.13, <i>Public Services</i>, of this EIR, and utilities including infrastructure, are analyzed in Section 4.16, <i>Utilities and Service Systems</i>. As discussed, the project would not result in growth demands that would exceed planned public services and infrastructure. Additionally, implementation of Mitigation Measure MM 4.13-2CC would require the project to pay fee assigned by the Kern County Planning and Natural Resources Department over the life of the project to offset costs for fire or police protection services resulting from the project. Mitigation Measure 4.13-3CC would require payment of sales taxes to the County and to California City, which would also help offset costs for providing various public services affected by the project. With these financial contributions, the proposed project would be consistent with this measure.</p>
<p>Goal: Accommodate new development which is compatible with and complements existing land uses within the General Plan planning area.</p>	<p>Consistent</p>	<p>The project would be consistent with the California City General Plan with approval of the CUP allowing for the development of the PV solar facility within the O/RA Zone.</p>
<p>Goal: Accommodate new development which is sensitive to and capitalizes on the General Plan planning area’s natural environmental setting.</p>	<p>Consistent</p>	<p>The project would be providing a utility use that would produce electricity using the natural high irradiation in the desert environment, without consumption of fossil fuels. As addressed in this EIR, including in Section 4.4, <i>Biological Resources</i> and Section 1.10, <i>Hydrology and Water Quality</i>, the project would be implemented to reduce impacts to the natural area setting with proposed mitigation measures. As addressed this EIR section, <i>Land Use and Planning</i>, the project would be consistent with the California City General Plan with approval of the CUP allowing for the development of the PV solar facility within the O/RA Zone. Additionally, as demonstrated throughout this EIR, the project would not have any significant unavoidable impacts on the environment.</p>
<p>Goal: Accommodate new development that is compatible with natural and manmade hazards that affect the General Plan planning area.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.7-1CC, MM 4.9-1CC through 4.9-</p>	<p>Seismic hazards are described and analyzed in Section 4.7, <i>Geology and Soils</i>. Mitigation Measure MM 4.7-1CC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation thereby reducing impacts to below a level of significance.</p>

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
	3CC, MM 4.10-1CC and MM 4.10-2CC.	<p>As discussed in Section 4.9, <i>Hazards and Hazardous Materials</i>, the proposed project the project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Additionally, implementation of Mitigation Measures MM 4.9-1CC through 4.9-2CC would reduce any impacts related to hazardous materials at the project site to a less than significant level.</p> <p>As discussed in Section 4.10, <i>Hydrology and Water Quality</i>, the southern and southeastern parcels of the project site are located within the 100-year floodplain of an unnamed intermittent stream. The alteration of surface topography via ground disturbance may have the potential to alter drainage patterns such that flooding hazards could be exacerbated on-site during a rain event. However, implementation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC would require the project proponent/operator to prepare and submit both a stormwater pollution prevention plan (SWPPP) and a final hydrologic study and drainage plan, both of which would include measures to reduce any potential flood hazards as a result of the project to below a level of significance.</p> <p>Additionally, final review of the proposed project by the Kern County Planning and Natural Resources Department and California City Community Development Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.</p>
Policy: The developer shall be responsible for all on-site costs incurred as a result of a proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity.	Consistent, with implementation of Mitigation Measures MM 4.13-2CC and MM 4.13-3CC.	The project developer is responsible for the on-site costs for project implementation. implementation of Mitigation Measure MM 4.13-2CC would require the project to pay fee assigned by the Kern County Planning and Natural Resources Department over the life of the project to offset costs for fire or police protection services resulting from the project. Mitigation Measure 4.13-3CC would require payment of sales taxes to the County and to California City, which would also help offset costs for providing various public services affected by the project. With these financial contributions, the proposed project would be consistent with this measure.
Policy: In the areas of the City outside the central core, all developments must provide complete public infrastructure improvements including	Consistent	The project does not require or involve use of public infrastructure for water distribution and sewage collection, or development of residential uses. However, the project will install a septic and leach field system at the O&M

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
community water distribution and sewage collection and treatment systems. These developments may be permitted a density increase up to 20 percent if the developments include an affordable homes component. All land division activities shall be consistent with the provision.		building, which would be construction in conformance to the County Building Code requirements.
Chapter 5, Open Space and Conservation Element		
5.14 Open Space		
Policy: Encourage maximum cooperation among all levels of government, private interests, and individuals in the management, conservation, and protection of open space resources.	Consistent	The solar facility is compatible with open space and other resource management land uses, and the placement of solar arrays at the project site may deter other urban and suburban land uses from being developed at the project site.
5.15 Conservation		
Goal: Promote the improvement of air quality and the maintenance of State and federal air quality standards.	Consistent with implementation of Mitigation Measures MM 4.3-1CC and 4.3-4CC.	Consistent with this goal, the proposed project would develop a solar PV facility that would generate up to 500 MW of solar energy and 600 MWh of energy storage and offset an equivalent amount of fossil fuel-generated electrical power, thereby reducing emissions associated with fossil fuel power generation. Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. The project would implement Mitigation Measures MM 4.3-1CC through MM 4.3-4CC to support compliance with State and federal air quality standards.
Goal: Encourage conservation of energy resources.	Consistent	Consistent with this goal, the proposed project would develop a solar PV facility that would generate 500 MW of solar energy and 600 MWh of energy storage and offset an equivalent amount of fossil fuel-generated electrical power.
Goal: Promote conservation of sensitive vegetation and wildlife.	Consistent with implementation of Mitigation Measures MM 4.4-1CC through 4.4-23CC.	Consistent with this goal, the project proposes the development of a PV power generation facility in the desert region of Kern County, on a previously disturbed site. As discussed in Section 4.4, <i>Biological Resources</i> , potential impacts to biological resources would be reduced to less-than-significant levels with implementation of Mitigation Measures MM 4.4-1CC through 4.4-23CC.

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
Goal: Promote conservation of historical and cultural resources.	Consistent with implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. The project would comply with this policy through the implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC, all of which ensure the preservation of known and unknown cultural and historic resources.
Policy: Require compliance for development projects with the requirements of the California Water Code Section 10910 regarding water supply.	Consistent	The project would comply with all applicable laws, statutes, and regulations including the California Water Code Section 10910 regarding water supply.
Policy: Cooperate with the Kern County Air Pollution Control District (APCD) to implement the APCD’s Air Quality Attainment Plan.	Consistent with implementation of Mitigation Measures MM 4.3-1CC and MM 4.3-4CC	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As part of the project entitlement process, including the public review process of this EIR, the County and developer will coordinate with the EKAPCD to support implementation of the EKAPCD’s AQAP. Mitigation Measures MM 4.3-1CC through MM 4.3-4CC have been identified to support compliance with the AQAP.
Policy: Continue to enforce the City’s grading code, along with dust control and other rules and measures through the Air Pollution Control District to mitigate air quality effects during the construction of new development.	Consistent with implementation of Mitigation Measures MM 4.3-1CC and MM 4.3-4CC.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As identified in the analysis, the project would implement Mitigation Measures MM 4.3-1CC through 4.3-4CC for dust control measures during construction and operations and compliance with the APCD’s other rules and measures. The project would also comply with the City’s grading code.
Policy: Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.	Consistent with implementation of Mitigation Measures MM 4.3-1CC and MM 4.3-4CC.	Consistent with this goal, the proposed project would develop a solar PV facility that would generate 500 MW of solar energy and 600 MWh of energy storage and offset an equivalent amount of fossil fuel-generated electrical power. Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Mitigation Measures MM 4.3-1CC through MM 4.3-4CC would be implemented to minimize the direct and indirect emissions of air contaminants.
Policy: Protect sensitive vegetation and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans.	Consistent with implementation of Mitigation Measures MM 4.4-1CC through MM 4.4-21CC.	Project-related impacts to biological resources are analyzed in Section 4.4, <i>Biological Resources</i> , of this EIR. Mitigation Measures MM 4.4-1CC through 4.4-21CC would ensure that impacts to biological resources within the project area are reduced to a less-than-significant level.

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>Policy: Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC.</p>	<p>Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i>, of this EIR. The project would comply with this policy through the implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-3CC, all of which ensure the preservation of known and unknown cultural and historic resources.</p>
<p>Chapter 6, Safety Element</p>		
<p>6.5 Geologic and Seismic Hazards</p>		
<p>Goal: Protect the health, safety, and welfare of the community from hazards related to seismic activity.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.7-1CC.</p>	<p>Seismic hazards are described and analyzed in Section 4.7, <i>Geology and Soils</i>. Mitigation Measure MM 4.7-1CC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation thereby reducing impacts to below a level of significance.</p>
<p>Policy: Development shall be prohibited in areas where measures to correct identified geologic or seismic hazards are not feasible.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.7-1CC.</p>	<p>Geologic and seismic hazards are described and analyzed in Section 4.7, <i>Geology and Soils</i>. Mitigation Measure MM 4.7-1CC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation thereby reducing impacts to below a level of significance.</p>
<p>Policy: Minimize the potential damage to structures and loss of life that could result from earthquakes.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.7-1CC.</p>	<p>Seismic hazards are described and analyzed in Section 4.7, <i>Geology and Soils</i>. Mitigation Measure MM 4.7-1CC, which requires implementation of recommendations from the Geotechnical Engineering Report for the proposed project, would ensure site stability to the maximum extent possible during project construction and operation thereby reducing impacts to below a level of significance.</p>
<p>6.6 Flood Hazards</p>		
<p>Goal: Minimize the potential for personal injuries and property damage and economical loss caused by inundation in flood hazard areas.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.10-1CC and 4.10-2CC.</p>	<p>As discussed in Section 4.10, <i>Hydrology and Water Quality</i>, the southern and southeastern parcels of the project site are located within the 100-year floodplain of an unnamed intermittent stream. The alteration of surface topography via ground disturbance may have the potential to alter drainage patterns such that flooding hazards could be exacerbated on-site during a rain event. However, implementation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC would require the project proponent/operator to prepare and</p>

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		submit both a stormwater pollution prevention plan (SWPPP) and a final hydrologic study and drainage plan, both of which would include measures to reduce any potential flood hazards as a result of the project to below a level of significance.
<p>Policy: Ensure that residential, commercial, industrial, and other land development is adequately protected from the hazards which occur from flooding and storm water runoff.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.10-1CC and 4.10-2CC.</p>	<p>As discussed in Section 4.10, <i>Hydrology and Water Quality</i>, the southern and southeastern parcels of the project site are located within the 100-year floodplain of an unnamed intermittent stream. The alteration of surface topography via ground disturbance may have the potential to alter drainage patterns such that flooding hazards could be exacerbated on-site during a rain event. However, implementation of Mitigation Measures MM 4.10-1CC and MM 4.10-2CC would require the project proponent/operator to prepare and submit both a stormwater pollution prevention plan (SWPPP) and a final hydrologic study and drainage plan, both of which would include measures to reduce any potential flood hazards as a result of the project to below a level of significance.</p>
<p>6.7 Human-Induced Hazards</p>		
<p>Goal: Protect residents, businesses, and structures from human-induced hazards related to ground transportation, aircraft over flight, hazardous materials, and other human activities.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.11-2CC and MM 4.11-3CC.</p>	<p>The project would comply with all applicable laws, statutes, and regulations including those regulating the use, transport and disposal of hazardous materials. See Section 4.9, <i>Hazards and Hazardous Materials</i>, of this EIR for additional details.</p> <p>The project site is located in the adopted Military Aviation boundaries for the ALUCP for the R-2508 Airspace Complex for Edwards Air Force Base and China Lake Naval Weapons Station. Additionally, the southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. The project’s safety considerations are addressed above under Table 4.11-2, Chapter 2.5.2, Airport Land Use Compatibility Plan, Goal 1. Implementation of Mitigation Measure MM 4.9-3CC would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County and California City by requiring the developer to coordinate with the DoD and obtain approval from FAA and the public airports and military installations in the area. With implementation of this mitigation measure, impacts would be less than significant.</p>

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
		<p>Kern County has two military aviation installations—the China Lake Naval Air Weapons Station and Edwards Air Force Base—as well other military installations within the San Joaquin Valley. The military has identified potential conflicts of users of the radio frequency spectrum located both on and off military installations as an area to be reviewed for compatibility issues. Operations of unmanned radio-controlled aircraft flights can have electronic interference from other sources of radio signals. Coordination of frequency and notification can mitigate this impact. The project impacts are considered significant, but would be reduced to a less than significant level with implementation of Mitigation Measure MM 4.11-2CC.</p>
<p>Policy: Ensure that hazardous materials used by commercial and industrial land uses are properly transported, handled, and used, and that information on their handling, transport, and use is available to the California City Fire Department and other safety agencies in accordance with the Fire Code.</p>	<p>Consistent</p>	<p>The project would comply with all applicable laws, statutes, and regulations including those regulating the use, transport and disposal of hazardous materials. See Section 4.9, <i>Hazards and Hazardous Materials</i>, of this EIR for additional details.</p>
<p>Policy: Require that new development proposals be consistent with the Kern County Airport Land Use Compatibility Plan in order to eliminate hazards due to land use conflicts with the California City Municipal Airport, the Mojave Airport, Edwards Air Force Base, and other military over flight activities.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.11-2CC.</p>	<p>Refer to Table 4.11-2, Chapter 2.5.2, Airport Land Use Compatibility Plan, Goal 1, and the Table 4.11-3, Chapter 6.7, Human-Induced Hazards, Goal, above.</p>
<p>6.8 Public Safety</p>		
<p>Goal: Provide and implement effective emergency services that will protect the health, safety, and welfare of residents and workers within the community.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.13-1CC and MM 4.13-2CC.</p>	<p>As discussed in Section 4.13, <i>Public Services</i>, of this EIR, implementation of Mitigation Measure MM 4.13-2CC would ensure that the project operator pay an annual fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facility in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of</p>
<p>Goal: Protect the health, safety and welfare of residents, businesses, and property from fire danger.</p>		

Table 4.11-3. Consistency Analysis with the City of California City General Plan, continued

Goals/Policies	Consistency Determination	Project Consistency
<p>Policy: Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.</p>		<p>the proposed project would be appropriately funded. Mitigation Measure MM 4.13-1CC, would ensure that the project proponent/operator implement a fire safety plan for use during construction, operation and decommissioning of the project, thereby reducing the risk of impacts to workers, residents, and businesses in the unlikely event of an on-site fire.</p>
<p>Policy: Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.</p>		
<p>Policy: Review all new development proposals for fire safety considerations.</p>	<p>Consistent</p>	<p>Final review and approval of the proposed project by the Kern County Planning and Natural Resources Department and California City Community Development Department would ensure that the project meets the City’s fire safety considerations.</p>
<p>Chapter 7, Noise Element</p>		
<p>Goal: To protect residents and workers in the City from the harmful and annoying effects of exposure to excessive noise.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.12-1CC through MM 4.12-3CC.</p>	<p>Noise impacts are evaluated in Section 4.12, <i>Noise</i>, of this EIR. With implementation of Mitigation Measures MM 4.12-1CC through MM 4.12-3CC, project-related noise would not exceed the County’s thresholds.</p>
<p>Policy: Development proposals shall be reviewed for consistency with the California City Airport Land Use Compatibility Plan to reduce the potential for noise conflicts associated with the California City Municipal Airport, the Mojave Airport, and Edwards Air Force Base.</p>	<p>Consistent with implementation of Mitigation Measures MM 4.9-3CC and MM 4.11-2CC.</p>	<p>Refer to Table 4.11-2, Chapter 2.5.2, Airport Land Use Compatibility Plan, Goal 1, and the Table 4.11-3, Chapter 6.7, Human-Induced Hazards, Goal, above.</p>
<p>Source: City of California City 2009.</p>		

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4.12.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to noise and ground-borne vibration for the proposed project. It also describes the impacts associated with noise and ground-borne vibration 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 is largely based on the *Kudu Solar Project Noise Study* prepared by Rincon Consultants, Inc. (Rincon 2020) located in Appendix J of this EIR.

Noise Fundamentals

An understanding of the physical characteristics of sound is useful for evaluating environmental noise. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical (i.e., to the body itself) and physiological (i.e., to body functions) effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities (e.g., normal conversations, watching television, telephone conversations) and 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 oscillates at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the healthy human ear.

Sound levels are expressed by reference to a specified national/international standard. The sound pressure level is used to describe sound pressure (loudness) and is specified at a given distance or specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure (dB) is referenced to a value of 20 micropascals (μPa). Sound pressure level depends not only on the power of the source but also on the distance from the source to the receiver and the acoustical characteristics of the sound propagation (spread) path (absorption, reflection, etc.).

Outdoor sound levels decrease logarithmically as the distance from the source increases. This decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in a homogeneous and undisturbed manner travels in spherical waves. As the sound waves travel away from the source, the sound energy is dispersed over a greater area, decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point source reduces the noise level at a rate of 6 dB per doubling of distance.

Atmospheric absorption also influences the sound levels received by an observer. The greater the distance traveled, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries farther) than higher frequencies. Over long distances, lower frequencies become dominant as the higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other atmospheric phenomena also play a significant role in determining the degree of attenuation. For example, certain conditions, such as temperature inversions, can channel or focus the sound waves, resulting in higher noise levels than would result from simple spherical spreading.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the environment do not consist of a single frequency. Instead, they are a broad band of many frequencies differing in sound level. Because of the broad range of audible frequencies, methods have been developed to quantify these values into a single number representative of human hearing. The most common method used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that is reflective of human hearing characteristics. Human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This process is termed “A weighting,” and the resulting dB level is termed the “A-weighted” decibel (dBA).

Because A-weighting is designed to emulate the frequency response characteristics of the human ear and reflect the way people perceive sounds, it is widely used in local noise ordinances and state and federal guidelines, including those of the State of California and Kern County. Unless specifically noted, the use of A-weighting is always assumed with respect to environmental sound and community noise, even if the notation does not include the “A.”

In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and is barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the reference level against which the amplitude of other sounds is compared. Normal speech has a sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative sound levels than absolute sound levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the average person as a doubling (or halving) of the sound's loudness.

Because of the logarithmic nature of the decibel, sound levels cannot be added or subtracted directly. However, some simple rules are useful in dealing with sound levels. First, if a sound's acoustical energy is doubled, the sound level increases by 3 dBA, regardless of the initial sound level (e.g., 60 dBA + 60 dB = 63 dBA; 80 dBA + 80 dBA = 83 dBA). However, an increase of 10 dBA is required to double the perceived loudness of a sound, and a doubling or halving of the acoustical energy (a 3 dBA difference) is at the lower limit of readily perceived change.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level (L_{eq}), is used to describe sound that is constant or changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous (L_{max}) and minimum instantaneous (L_{min}) noise level indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{10} , L_{50} , and L_{90} may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L_{10} typically describe transient or short-term events, L_{50} represents the median sound level during the measurement interval, and L_{90} levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level (L_{dn} or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10:00 p.m. to 7:00 a.m.). The L_{dn} is the descriptor of choice and used by nearly all federal, state, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. In California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is 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 these descriptors, the L_{dn} or CNEL dBA value for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour L_{eq} . Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the L_{dn} will be 6 dBA higher than the 24-hour L_{eq} value. For convenience, a summary of common noise metrics is provided in Table 4.12-1, *Common Noise Metrics*. To provide a frame of reference, common sound levels are presented in Figure 4.12-1, *Effects of Noise on People*.

Table 4.12-1. Common Noise Metrics

Unit of Measure		Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7:00 p.m. to 10:00 p.m.) and a 10 dBA penalty for sleeping hours (10:00 p.m. to 7:00 a.m.).
L_{dn}	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10:00 p.m. and 7:00 a.m.
L_{eq}	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.
L_{max}	Maximum Noise Level	L_{max} represents the maximum instantaneous noise level experienced during a given period of time. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise.
L_{min}	Minimum Noise Level	L_{min} represents the minimum instantaneous noise level experienced during a given period of time. It reflects baseline operating conditions and is commonly referenced as the noise floor.
$L_1, L_{10}, L_{50}, L_{90}$	Percentile Noise Exceedance Levels	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period.

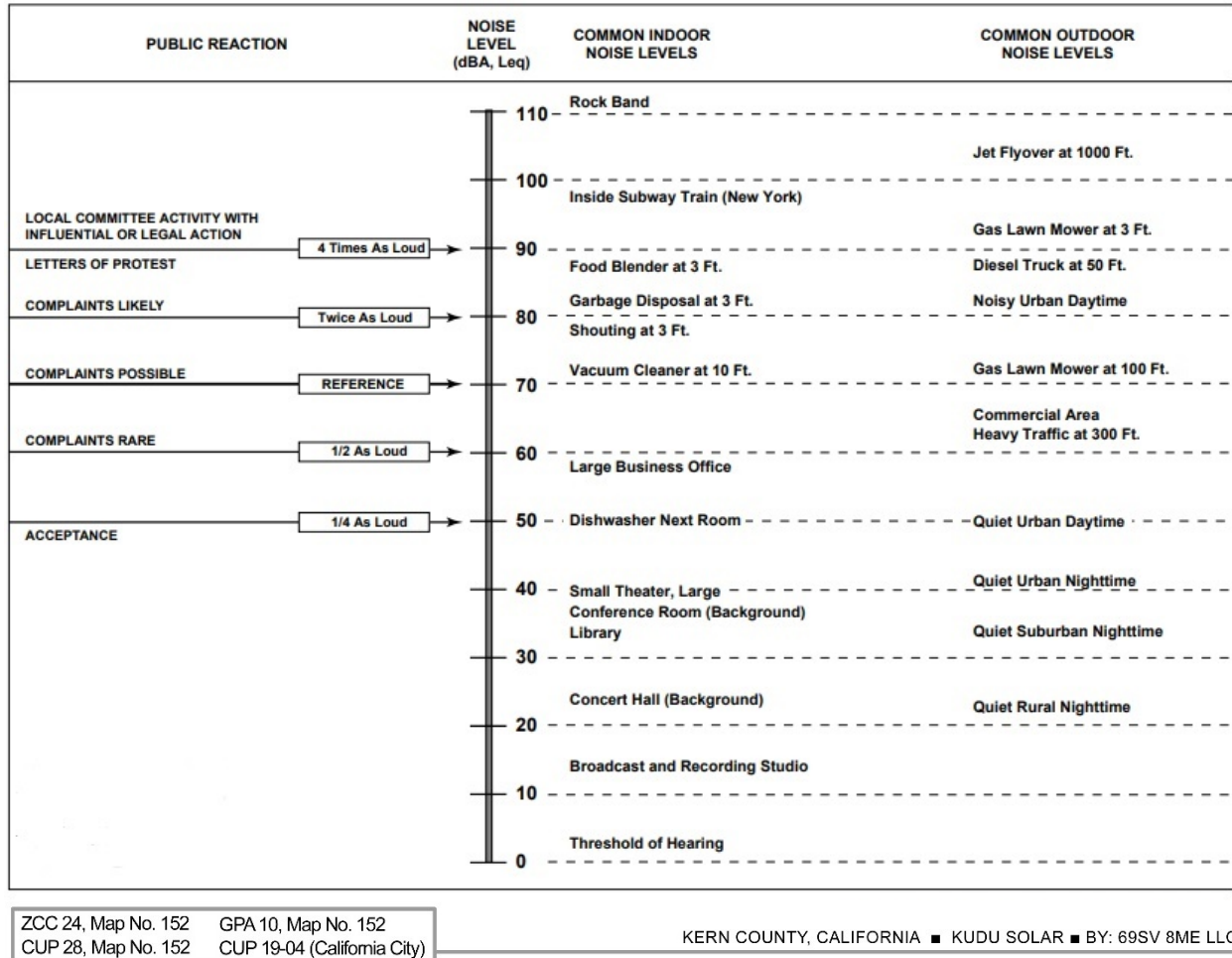


Figure 4.12-1. Effects of Noise on People

Vibration

Ground-borne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most ground-borne vibration that can be felt by the human body starts at less than 1 Hz and goes to a high of about 200 Hz.

While people have varying sensitivities to vibrations at different frequencies, in general people are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as ground-borne noise. Ground-borne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source. Although ground-borne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances. When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level.

However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings.

Several different methods can be used to quantify vibration. The 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 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. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA 2018). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne 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.

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA 2018).

4.12.2 Environmental Setting

Project Location

The project site consists of 75 parcels comprising approximately 1,955 acres located in unincorporated Kern County and the City of California City; refer to Figure 3-1, *Vicinity Map*. A total of 42 project parcels (totaling approximately 673.60 gross acres) are located within unincorporated Kern County, and 33 project parcels (totaling approximately 1,281.53 gross acres) are located within the jurisdictional limits of California City. The project is located within the boundaries of the Kern County General Plan, the Fremont Rural Community Plan, and the City of California City General Plan planning boundaries. The cities of Lancaster and Palmdale in Los Angeles County are located within the greater project vicinity, approximately 30 miles to the south of the project site's southern extent.

The project area is adjacent to the previously approved Eland 1 Solar Project and south of the existing Springbok 1 & 2 Solar Projects, and north of the California City Municipal Airport. The Kudu Solar Project would potentially share infrastructure with the Eland 1 Solar Project, including but not limited to substations and gen-tie lines.

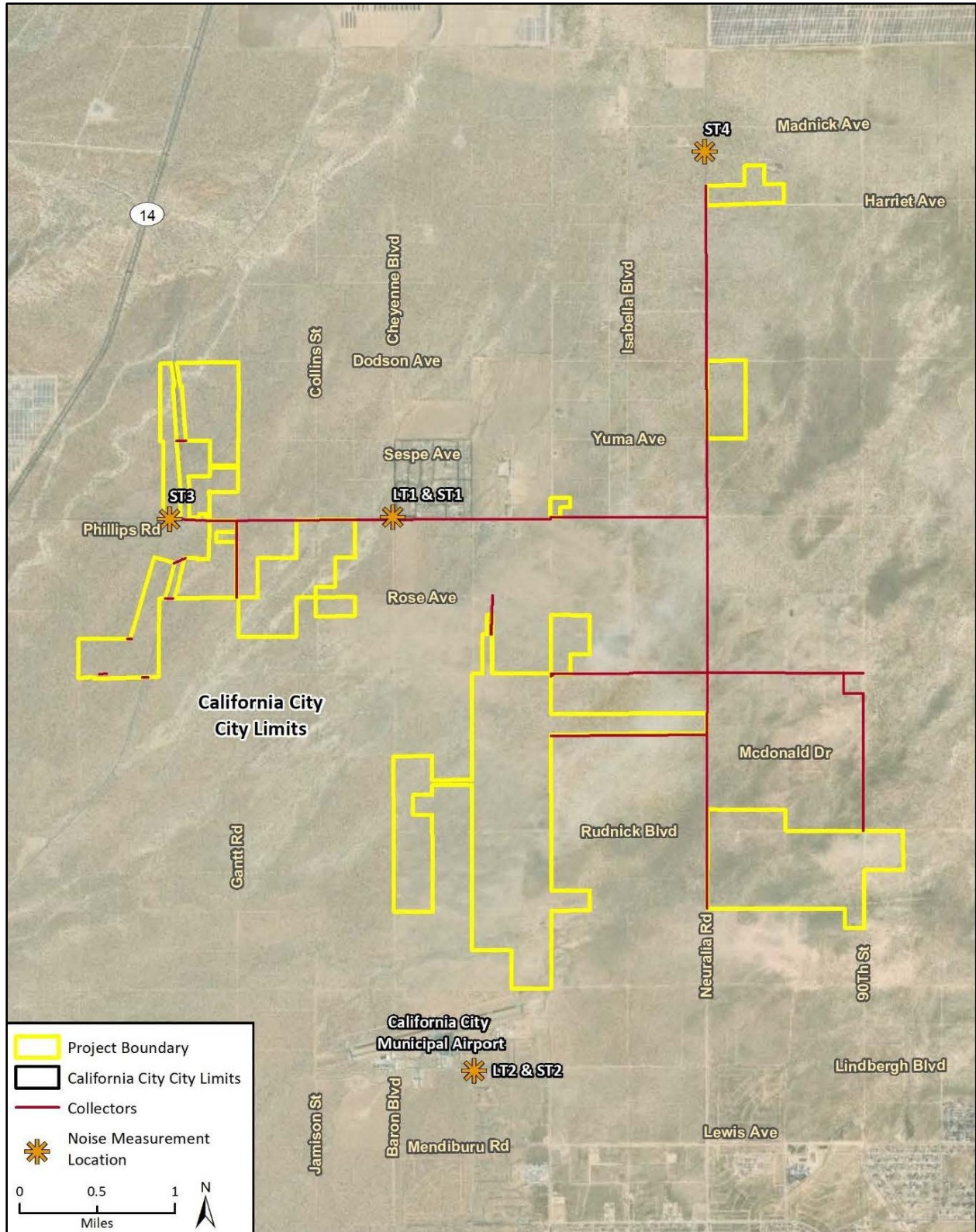
The majority of the project site is bisected to the east-west by Washburn Boulevard (which is also the Kern County/California City limit line) and to the north-south by Neuralia Road. State Route 14, a four-lane divided highway located approximately one mile to the west, provides regional access to the project site. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland project site.

According to the US Geological Survey (USGS), the project site is located on the California City North and Mojave North East 7.5 minute USGS Quadrangles at Township 31S, Range 37E – portions of Sections 14, 15, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and Township 32S, Range 37E – portions of Sections 1, 2, 3, 4, 9, 10, 11, 12.

Existing Noise Environment

The project site is located in a rural desert environment with scattered rural residential uses. The project vicinity consists largely of undeveloped land, with existing development consisting of rural access roads, scattered rural residences, and wind and solar energy facilities. The primary sources of noise on-site and in the surrounding area include motor vehicles, wind, and fauna (e.g., birds, small mammals, etc.). The greatest vehicle noise would occur from vehicles traveling on the main thoroughfares (State Route [SR] 14, Phillips Road, and Neuralia Road). Additional noise sources in the area include aircraft associated with the California City Municipal Airport.

To evaluate existing noise levels in the area, four 15-minute noise measurements (ST-1 through ST-4) and two 24-hour noise measurements (LT-1 and LT-2) were taken on and near the project site. Figure 4.12-2, *Noise Measurement Locations*, shows the locations of the noise measurements. The noise measurement locations were chosen to provide a representative range of ambient noise levels across the project site and in the nearby area, especially near existing noise-sensitive residences and roadways. The short-term and long-term noise measurement results are shown in Table 4.12-2, *Noise Monitoring Results in the Project Site Vicinity*.



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

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Figure 4.12-2. Noise Measurement Locations

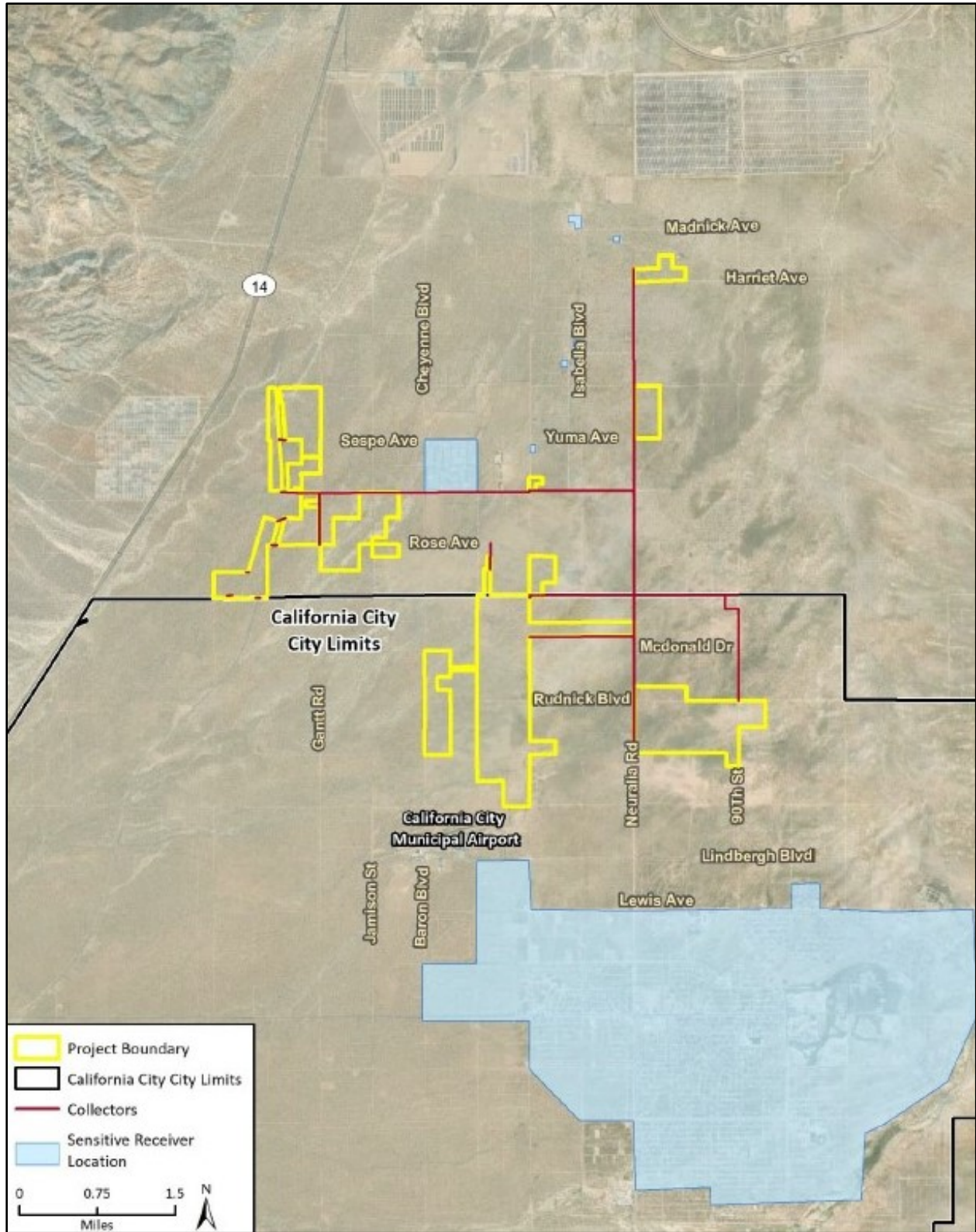
Table 4.12-2. Noise Monitoring Results in the Project Site Vicinity

Measurement	Measurement Location	Approximate Distance to Primary Noise Source	Sample Times	Noise Level (dBA L _{eq}) ¹
Short-Term				
ST-1	Cheyenne Boulevard/Phillips Road in Kern County	40 feet from centerline of Phillips Road	12:31 p.m. – 12:46 p.m.	51
ST-2	Mitchell Boulevard/Lindbergh Boulevard, California City	90 feet from centerline of Lindbergh Boulevard	11:32 a.m. – 11:47 a.m.	52
ST-3	Phillips Road near Sage Street in Kern County	25 feet from centerline of Phillips Road	1:43 p.m.– 1:58 p.m.	55
ST-4	Neuralia Road and Esther Avenue	30 feet from center of Neuralia Road	1:02 p.m. – 1:17 p.m.	63
Long-Term²				
LT-1	Cheyenne Boulevard/Phillips Road in Kern County	40 feet from centerline of Phillips Road	September 18-19, 2019	58
LT-2	Mitchell Boulevard/Lindbergh Boulevard, California City	90 feet from centerline of Lindbergh Boulevard	September 18-19, 2019	52
Source: Rincon 2020 (see Appendix J).				
Notes:				
¹ The equivalent noise level (L _{eq}) is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). For these measurements, the L _{eq} was over a 15-minute period.				
² Long-term measurements (24 hours) were taken from September 18, 2019 at 12:28 p.m. to September 19, 2019 at 11:28 a.m. (LT-1) and September 18, 2019 at 11:31 a.m. to September 19, 2019 at 10:31 a.m. (LT-2).				

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. Land uses that are generally not considered to be noise sensitive receptors include office, commercial, and retail developments. The Noise Element of the County General Plan identifies residences, schools, hospitals, parks, churches, and other similar land uses to be noise sensitive.

The project parcels are generally located in a rural area with nearby noise-sensitive receivers being single-family residences. The nearest residences in Kern County (in the community of Fremont) are located approximately 1,200 feet from the western project parcels (Site 1) and the nearest residences in California City are located approximately 3,300 feet from the southernmost project parcel. Some of the proposed routes for the collector lines would run adjacent to noise-sensitive receivers in a single-family residential neighborhood north of Phillips Road. Figure 4.12-3, *Locations of Noise-Sensitive Receptors Closest to Project Site*, shows the general locations of noise-sensitive receivers in the project area.



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.12-3. Locations of Noise-Sensitive Receptors Closest to Project Site

Airports

The southern portion of the project site is located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP). The project site is located immediately north of the California City Municipal Airport. Specifically, the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (Assessor’s Parcel Number [APN] 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APNs 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). According to Kern County ALUCP Table 2A, *Compatibility Criteria*, Compatibility Zone B1 is subject to substantial noise levels and Compatibility Zone C is subject to frequent noise intrusion.

4.12.3 Regulatory Setting

Federal

Department of Defense, Edwards Air Force Base Air Installation Compatible Use Zones

The Department of Defense requires military aviation facilities to prepare an Air Installation Compatible Use Zones study to protect community safety and health, promote appropriate development in the vicinity of military airfields, and protect taxpayer’s investment in national defense. The currently adopted study for Edwards Air Force Base indicates that areas affected by current noise and safety impacts are confined within the boundaries of the installation.

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Code of Federal Regulations (CFR) Title 14, Part 150, prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. CFR Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA L_{dn} (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL).

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.

USEPA Recommendations in “Information on Levels of Environmental Noise Requisite to Project Health and Welfare with an Adequate Margin of Safety” (NTIS 550\9-74-004, USEPA, Washington, D.C., March 1974)

In response to a federal mandate, the United States Environmental Protection Agency (USEPA) provided guidance in this document, 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 USEPA regulations or standards but identifies safe levels of environmental noise exposure without consideration of costs for achieving these levels or other potentially relevant considerations. It is intended to “provide state and local governments as well as the federal government and the private sector with an informational point of departure for the purpose of decision-making.” The agency is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues and therefore should not be construed as standards or regulations.

Federal Energy Regulatory Commission Guidelines on Noise Emissions from Compressor Stations, Substations, and Transmission Lines (18 CFR 157.206[d]5)

These guidelines 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 an L_{dn} of 55 dBA at any preexisting 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.

Federal Highway Administration Noise Abatement Procedures (23 CFR Part 772)

The purpose of 23 CFR Part 772 is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in the planning and design of highways. It establishes five categories of noise sensitive receptors and prescribes the use of the hourly L_{eq} as the criterion metric for evaluating traffic noise impacts.

US Department of Housing and Urban Development Environmental Standards (24 CFR Part 51)

The US Department of Housing and Urban Development regulations 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’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; Hearing Conservation Amendment (Federal Register 48 [46], 9738-9785, 1983)

The standard 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. 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

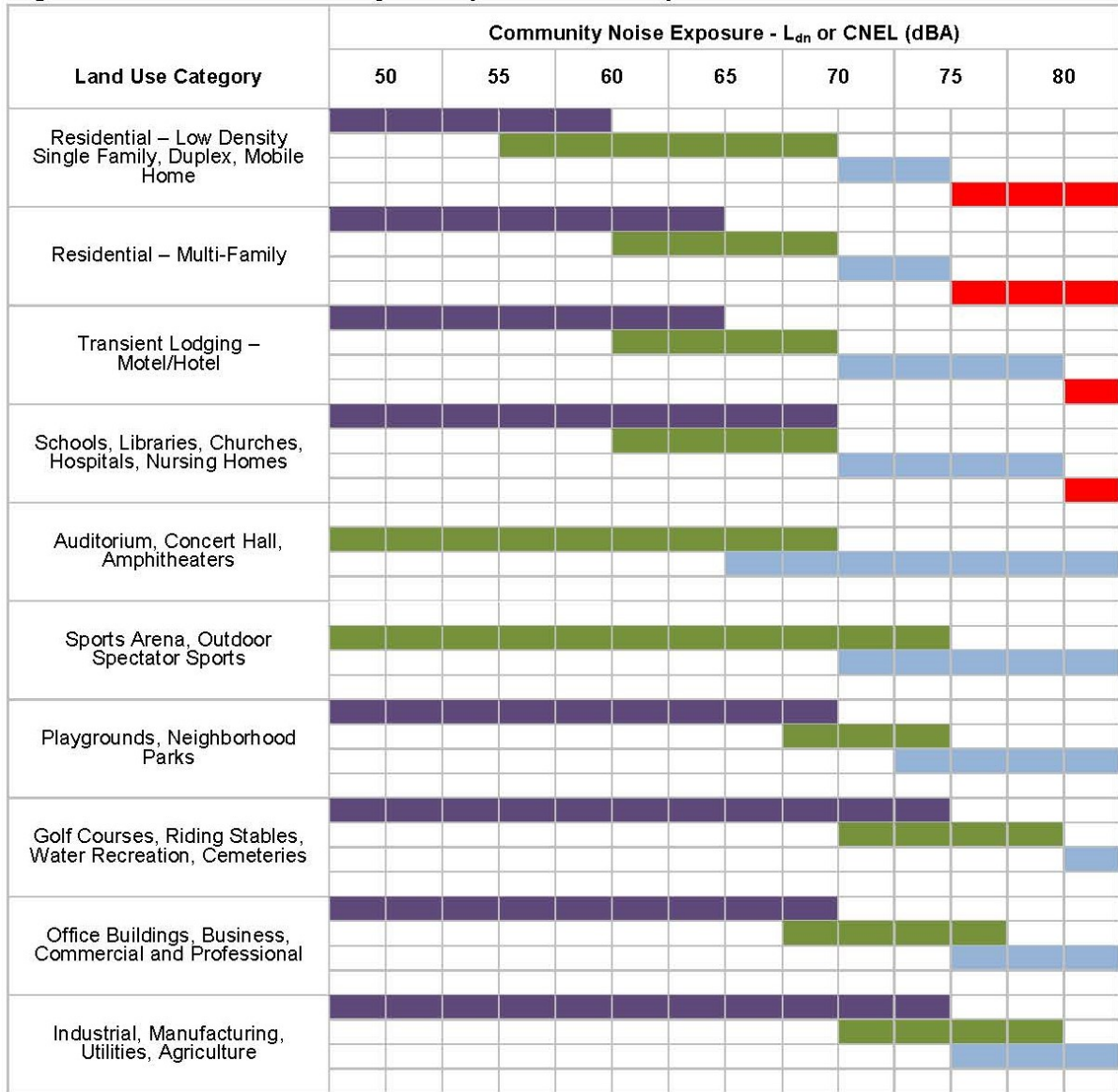
The California Department of Public Health has studied the correlation of noise levels and their effects on various land uses and established guidelines for evaluating the compatibility of various land uses, for the noise elements of local general plans, as a function of community noise exposure. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The 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 the Community Noise Equivalent Level (CNEL) or L_{dn} , establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances which serve as enforcement mechanisms for controlling noise.

The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in Figure 4.12-4, *Land Use Compatibility for Community Noise Environment*. 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 are up to 70 dBA CNEL.

CEQA Guidelines (Public Resources Code Section 21000 et seq.) requires the identification of “significant” environmental impacts and their feasible mitigation. Section XIII 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.



	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.

ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.12-4. Land Use Compatibility for Community Noise Environment

The state also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dBA at 15 meters. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

Local

Kern County

Kern County General Plan

The Noise Element of the 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 Kern County General Plan Noise Element 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 addition, the General Plan Energy Element identifies that the County may require preparation of an acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses; refer to Policy 10 below.

Applicable goals, policies, and implementation measures from the County's General Plan, relevant to the proposed project, are summarized below.

Chapter 3. Noise Element

3.3 Sensitive Noise Areas

Goals

- Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
- Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
- 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 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**Policy**

- 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.

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.

California City

California City General Plan

Chapter 7. Noise Element

7.6 Goals, Policies, and Implementation Measures

Goals

- Goal 1: To protect residents and workers in the City from the harmful and annoying effects of exposure to excessive noise.
- Goal 2: To protect the economic base of the City by preventing incompatible noise-sensitive land uses from encroaching upon existing or planned noise-producing land uses.
- Goal 3: To preserve the tranquility of residential areas by preventing noise-producing land uses from encroaching upon existing or planned noise-sensitive uses.
- Goal 4: To educate the residents and business owners in the City concerning the effects of exposure to excessive noise and the methods available for minimizing such exposure.

Policies

- Policy 1: Require proposed industrial land uses located adjacent to residential land uses or other noise-sensitive land uses to minimize potential noise levels and its associated health hazards. Buffer zones shall be required when necessary to maintain noise standards. Landscaping, picnic areas, parking, commercial, light industrial, heavy industrial, or other more compatible uses may be incorporated within the identified buffer zones.
- Policy 2: Development proposals shall be reviewed for consistency with the California City Airport Land Use Compatibility Plan to reduce the potential for noise conflicts associated with the California City Municipal Airport, the Mojave Airport, and Edwards Air Force Base.

Implementation Measures

- Measure N-1: The City shall review public and private development proposals to determine conformance with the policies of the Noise Element.
- Measure N-3: For development proposals subject to a discretionary approval (General Plan Amendment, Zone Change, or subdivision) and environmental review, an acoustical analysis shall be required as a part of the environmental review process. The requirements for the content of an acoustical analysis are provided in Exhibit 2 to the Noise Element.
- Measure N-4: The City shall develop and employ procedures to ensure that noise mitigation measures required as a result of an acoustical analysis are implemented in the development review and building permit processes.
- Measure N-5: The City shall develop and employ procedures to monitor compliance with the policies of the Noise Element after completion of projects where noise mitigation measures have been required.
- Measure N-7: The City shall request the California Highway Patrol, the County Sheriff's office, and the California City Police Department to actively enforce the California Vehicle Code sections relating to allowable vehicles on the public right-of-way, adequate vehicle mufflers and modified exhaust systems.
- Measure N-10: All discretionary development proposals shall be reviewed for compatibility with the adopted Airport Land Use Compatibility Plan. Appropriate limitations and conditions shall be incorporated to address compatibility with the California City Municipal Airport and encroachment issues for the Edwards Air Force Base, Naval Air Weapons Station China Lake, and the Military Complex Airspace. Incompatible uses shall not be permitted unless appropriate findings regarding public health, safety, and military readiness can be made.
- Measure N-14: The City shall restrict the hours of activity per Title 5, Article 4, Noise and Vibration, Section 5-1.407 of the CCMC:
- “(d) Noise sources associated with or vibration created by construction, repair or remodeling of real property or during authorized seismic surveys under the following conditions:

- (1) The activities occur between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year.
- (2) The activities do not take place on Sundays or federal holidays.”

California City Municipal Code

Title 5, Chapter 1, Article 4, *Noise and Vibration*, of California City’s Municipal Code contains operational noise limits for exterior and interior areas. Exterior noise standards are shown in Table 4.12-3, *California City Exterior Noise Standards*. In addition to the exterior noise standards, the residential interior noise standard in California City is 55 dBA from 7:00 a.m. to 10:00 p.m. and 45 dBA from 10:00 p.m. to 7:00 a.m.

Table 4.12-3. California City Exterior Noise Standards

Noise Zone	Noise Zone Definition (Type of Land Use)	Allowable Exterior Noise Level (dBA L _{eq})	
		7:00 AM to 10:00 PM	10:00 PM to 7:00 AM
I	Single, double and multiple family residential properties located at a distance more than 600 feet from a major roadway	50	45
II	Single, double, and multiple family residential properties located at a distance equal to or less than 600 feet from a major roadway	55	50
III	Commercial properties	65	60
IV	Manufacturing or industrial properties	70	70

Source: City of California City 1998.

Notes:

- No person shall create noise, or allow the creation of noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on other property to exceed:
 - The noise standard for a cumulative period of more than thirty minutes in any hour; or
 - The noise standard plus 5 dBA for a cumulative period of more than fifteen minutes in any hour; or
 - The noise standard plus 10 dBA for a cumulative period of more than five minutes in any hour; or
 - The noise standard plus 15 dBA for a cumulative period of more than one minute in any hour; or
 - The noise standard plus 20 dBA for any period of time.
- If the ambient noise level exceeds any of the above five noise limit categories, the cumulative period applicable to the category shall be increased to reflect the noise level.
- Each of the noise limits specified above shall be reduced by 5 dBA for impact or simple tone noises, or for noises consisting of speech or music.
- If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply.
- If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of day the noise level is measured.

Per Section 5-1.407 of the California City Municipal Code, noise sources associated with or vibration created by construction, repair or remodeling of real property or during authorized seismic surveys are exempt from the above standards under the following conditions:

- The activities occur between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year.
- The activities do not take place on Sundays or federal holidays.
- The noise level created by such activities does not exceed 60 dBA plus the limits specific herein as measured on residential property; and

- A vibration does not endanger the public health, welfare and safety.

Per Sections 5-1.412 and 5.1-413 of the California City Municipal Code, if the generator of noise is unable to comply with the above standards (e.g., performing construction activities outside of the allowed hours), the owner or operator of a noise or vibration source may file an application with the Health Officer for a variance. The owner or operator shall set forth actions taken to comply with the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for accomplishment. The application shall be accompanied by a fee in the amount established from time to time by resolution. A separate application shall be filed for each noise source. Several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of the application and fee, the Health Officer shall refer it with a recommendation within 30 days to the Planning Commission. The Planning Commission will consider the variance with the following:

- The magnitude of nuisance caused by the offensive noise;
- The uses of property within the area of impingement by the noise;
- The time factors related to study, design, financing and construction of remedial work;
- The economic factors related to age and useful life of the equipment; and
- The general public interest, welfare and safety.

Section 5-1.410 of the California City Municipal Code outlines the vibration standards, which states that no person shall create, maintain or cause ground vibration perceptible without instruments at any point on adjoining property. The perception threshold shall be presumed to be more than 0.05 in/sec RMS vertical velocity.

Kern County Airport Land Use Compatibility Plan

The Kern County ALUCP establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses.

The southern portion of the project site is located within an area covered by the Kern County ALUCP. The project site is located immediately north of the California City Municipal Airport. Specifically, the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). According to Table 2A – Compatibility Criteria of the Kern County ALUCP, Compatibility Zone B1 is subject to substantial noise levels and Compatibility Zone C is subject to frequent noise intrusion.

4.12.4 Impacts and Mitigation Measures

Methodology

The proposed project’s potential noise and ground-borne vibration impacts were assessed in this section based on the *Kudu Solar Project Noise Study* located in Appendix J of this EIR. To assess the potential for temporary construction and long-term operational noise impacts, noise-sensitive receptors closest to the

project site were identified. Figure 4.12-5, *Locations of Noise-Sensitive Receptors Closest to Project Site*, shows the general locations of noise sensitive receptors in the project area.

Potential significant impacts associated with the project were evaluated on a quantitative and qualitative basis through a review of existing literature and available information, and by using professional judgment in comparing the anticipated proposed project effects on noise with existing conditions. The evaluation of proposed project impacts is based on significance criteria established by Appendix G of the CEQA Guidelines, which the Lead Agency has determined to be appropriate criteria for this EIR.

Short-Term Construction Noise

Construction of the project would involve the temporary use of noise-generating equipment during various phases, including transport of personnel and materials to the site, heavy machinery used in grading and clearing the site, pneumatic post drivers to install foundation supports for solar array modules, as well as equipment used during construction of the proposed solar arrays, infrastructure improvements, and related structures. Emergency diesel generators may be used during construction activities.

The FHWA's software program Roadway Construction Noise Model (RCNM) was used to estimate construction noise at nearby sensitive receptors. RCNM provides reference noise levels at the standard distance of 50 feet and estimates noise levels at nearby sensitive receivers based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise such as construction equipment). Although construction activity would typically take place in the interior of project parcels, this analysis conservatively assumes that equipment may be used along the boundaries of project parcels facing the nearest noise-sensitive receivers. In addition, RCNM does not consider topography or other environmental factors that attenuate noise. The average noise levels (L_{eq}) from all combined equipment were modeled at the nearest noise-sensitive receivers. Noise levels were modeled from the use of equipment at individual project parcels and collector lines, as well as from multiple sites simultaneously under construction.

On-site construction noise would cause a significant impact if it occurs outside of the County's permitted hours of 6:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends, within 1,000 feet of an occupied residential dwelling, unless the project proponent obtains an exemption to prohibited nighttime construction noise pursuant to Chapter 8.36 of the Kern County Code and implements a noise control plan to reduce nighttime construction noise. On-site construction noise would also create a significant impact if it exceeds California City's 60 dBA construction noise limit. In addition, a significant impact may occur if daytime construction activity results in extremely high noise levels that could be detrimental to the health and safety of nearby residents.

Short-Term Construction Traffic Noise

Noise levels from existing traffic and with-construction traffic along SR 14, Phillips Road, and Neuralia Road were estimated in terms of peak-hour L_{eq} using the Traffic Noise Model, Version 2.5 (TNM 2.5). The model calculations are based on estimates of existing vehicle trips collected by Kern Council of Governments in 2017, and from Caltrans traffic counts taken in 2017 for SR 14. Vehicle trips generated by project construction activities are estimated by traffic volumes provided in the *Aratina Solar Project Traffic Impact Analysis* (EPD Solutions, Inc. 2019), a similar project in the region. The Aratina Solar Project also assumed up to 1,000 workers during peak construction periods; which would occur during the overlap of concrete foundations, structural steel work, and electrical/instrumentation work.

For traffic-related noise, impacts are considered potentially significant if project-generated traffic would result in exposure of sensitive receptors to an unacceptable increase in noise levels during construction and/or operational activities. Recommendations in the *FTA's Transit Noise and Vibration Impact Assessment Manual* were used to determine whether increases in traffic noise would be unacceptable (FTA 2018). Under these FTA criteria, as existing ambient noise levels increase, the “allowable” increase in noise exposure due to a project is reduced. Table 4.12-4, *Significance of Changes in Roadway Noise Exposure*, shows the FTA criteria considered when evaluating traffic noise generated by the project. If sensitive receptors would be exposed to long-term traffic noise increases exceeding the criteria identified in Table 4.12-4, *Significance of Changes in Roadway Noise Exposure*, impacts may be considered significant.

Table 4.12-4. Significance of Changes in Roadway Noise Exposure

Existing Noise Exposure (dBA L _{dn} or L _{eq})	Allowable Noise Exposure Increase (dBA L _{dn} or L _{eq})
40-45	10
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

Source: FTA 2018.

Decommissioning Noise

The project facility has an anticipated maximum operational life of 30-40 years, after which the project proponent of the facility may choose to update the site technology and re-commission, or decommission and remove the systems and their components. If decommission occurs, activities associated with decommissioning would be similar or lower than the noise levels experienced under the worst-case construction activities. Therefore, noise impacts from decommissioning are anticipated to be identical or less than those occurring during construction. As such, the project’s decommissioning noise impacts do not warrant a separate analysis and instead will be assessed using the analysis provided for the project’s construction noise impacts.

Long-Term On-Site Operational Noise

On-site operational noise sources were modeled with SoundPLAN. Propagation of modeled stationary noise sources was based on ISO Standard 9613-2, “Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation.” The assessment methodology assumes that all receivers would be downwind of stationary sources. This is a worst-case assumption for total noise impacts, since, in reality, only some receivers would be downwind at any one time. Operational noise sources from the project include PV solar arrays with associated electrical equipment (such as transformers and inverters), energy storage systems, substations, collector lines, and the O&M facility.

Operational noise would result in a significant impact if it would exceed Kern County’s standard of 65 dBA L_{dn} for exterior noise at the nearest noise-sensitive receptors or California City’s 50 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. or 45 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. noise limits for single- and multi-family residences.

Long-Term Operational Traffic Noise

Vehicle trips generated by project operational activities are estimated by traffic volumes provided in the *Aratina Solar Project Traffic Impact Analysis*, a similar project in the region, which listed 22 trips for 5 employees (EPD Solutions, Inc. 2019) or 4.4 trips per employee. The proposed project is estimated to have 20 employees; therefore, project operation is estimated to generate 88 trips per day.

Modeling of traffic noise indicates that, in general, a 10 percent increase in traffic volume would raise traffic noise by approximately 0.4 dBA, a 20 percent increase would raise traffic noise by about 0.8 dBA, a 30 percent increase would result in an approximately 1.1 dBA increase in traffic noise, and a 40 percent increase would increase traffic noise by about 1.5 dBA. The significance of the project's increase in traffic noise was determined using the FTA criteria shown in Table 4.12-4, *Significance of Changes in Roadway Noise Exposure*.

Construction Ground-Borne Vibration

There are currently no federal, state, or Kern County regulatory standards for ground-borne vibration. However, as discussed above, California City has identified 0.05 in/sec RMS as the perception vibration threshold at adjoining properties.

Additionally, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in Table 4.12-5, *Vibration Criteria for Structural Damage*, and Table 4.12-6, *Vibration Criteria for Human Annoyance*, respectively below.

As indicated in Table 4.12-5, *Vibration Criteria for Structural Damage*, 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. With regard to human perception (refer to Table 4.12-6, *Vibration Criteria for Human Annoyance*), 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.

Table 4.12-5. Vibration Criteria for Structural Damage

Building Type	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2020.
Notes:
Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV = peak particle velocity; in/sec = inches per second

Table 4.12-6. Vibration Criteria for Human Annoyance

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2020.
Notes:
Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV = peak particle velocity; in/sec = inches per second

Vibration associated with construction of the project has the potential to be an annoyance to nearby land uses. Kern County does not have adopted limits for determining significance of vibration impacts on structures or persons. Caltrans has developed limits for the assessment of vibrations from transportation and construction sources. The Caltrans vibration limits are reflective of standard practice for analyzing vibration impacts on structures from continuous and intermittent sources. The Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) identifies two impact criteria for buildings and humans. Table 4.12-5, *Vibration Criteria for Structural Damage*, presents the impact criteria for buildings and Table 4.12-6, *Vibration Criteria for Human Annoyance*, presents the impact criteria for humans. The criteria identified in Table 4.12-5, *Vibration Criteria for Structural Damage* and Table 4.12-6, *Vibration Criteria for Human Annoyance* will be used to determine the significance of project-generated ground-borne vibration, with the exception of sensitive receptors or structures in California City. Per California City Municipal Code Section 5-1.410, project-generated vibration shall not exceed 0.05 in/sec RMS at any point on an adjoining property.

Operational Ground-Borne Vibration

The project's constructed facilities would not include sources of vibration. Operation of the project would involve O&M traffic, including O&M staff commute and regular maintenance truck and panel washing activity (vibration negligible, i.e., not measurable). As these activities and O&M traffic would be minimal, the project would not generate a substantial amount of operational-related or traffic-related vibration.

Substantial Temporary or Permanent Ambient Noise Increase in Excess of Standards

Kern County regulates noise levels per the requirements of Chapter 8.36 (Noise Control) of the Kern County Code of Ordinances, which establishes hours of construction and limitations on construction-related noise impacts on adjacent sensitive receptors. Specifically, construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends. Given that a 5 dBA change in the community noise environment is considered to be readily perceptible by the human ear, construction activities occurring outside of the acceptable construction hours established by the County that increases the ambient noise levels at a noise-sensitive land use by 5 dBA or more is considered to be a violation of the County's construction noise regulations.

For operational noise, the Kern County General Plan Noise Element requires that proposed commercial and industrial uses or operations 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}. Additionally, the Fremont Interim Rural Community Plan applies to a portion of the project area. As a formal Specific Plan has not yet been adopted for this community, no formal plans have yet been adopted and the goals and policies of the Kern County General Plan are instead applicable to development and potential noise levels that may result during construction.

In assessing the potential noise impacts resulting from the proposed project's use of stationary operational equipment, the nearby noise-sensitive land uses are therefore evaluated based on the County's General Plan average daily noise level limit of 65 dBA L_{dn}. As such, operational noise impacts from stationary equipment are assessed by determining if the proposed project would result in a substantial increase in ambient noise levels that would exceed the applicable County General Plan noise standards at the outdoor activity area of the nearest noise-sensitive land use.

Excessive Ground-Borne Vibration

Kern County does not have regulations that define acceptable levels of vibration. For the purposes of assessing potential ground-borne vibration impacts associated with the proposed project, Caltrans's vibration criteria for potential structural damage risks and human annoyance was used in this analysis. Accordingly, ground-borne vibration levels would be considered significant if predicted short-term construction or long-term operational ground-borne vibration levels attributable to the proposed project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.2 in/sec PPV, respectively) at the nearest off-site existing structure (refer to above Table 4.12-5, *Vibration Criteria for Structural Damage*, and Table 4.12-6, *Vibration Criteria for Human Annoyance*). These thresholds are considered to represent a conservative level at which construction-related activities would result in either structural damage or human annoyance.

Thresholds of Significance

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

A project could have a significant adverse effect on noise if it would result in:

- a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- 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.
- d) For a project located within the vicinity of a private airstrip or Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to noise, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.12-1: The project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

On-Site Construction Noise

Construction of the project would involve the use of noise-generating equipment during various phases, including transport of personnel and materials to the site, heavy machinery used in grading and clearing the site, pneumatic post drivers to install foundation supports for solar array modules, as well as equipment used during construction of the proposed solar arrays, infrastructure improvements, and related structures. Emergency diesel generators may be used during construction activities.

Noise levels associated with heavy construction equipment at a reference distance of 50 feet from the source ranges from about 74 to 85 dBA, depending upon the types of equipment in operation at any given time and phase of construction. The highest noise levels during construction would result from pneumatic post-driving of foundation support posts for the solar array modules and from the use of auger drill rigs and scrapers.

Project components at all project parcels and collector lines would be constructed over a 12- to 18-month period. This analysis makes a conservative assumption that all construction at a project parcel and the collector lines would occur simultaneously. In practice, however, grading and site preparation would take place sequentially at the project sites. When these activities are completed at one project parcel, post driving would start in that area while grading equipment would begin operating at another project parcel.

Construction activities would be subject to Kern County and California City policies and regulations. Heavy construction activities would normally occur on-site between the hours of 6:00 a.m. and 5:00 p.m., which is between the acceptable hours for construction listed in Section 8.36.020(H) of the Kern County Code and Section 5-1.407 of the California City Municipal Code. However, additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. As a result, some construction activities may be required to continue 24 hours per day, seven days per week. Activities that generate relatively low amounts of noise, such as refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning, may potentially occur between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and the hours of 9:00 p.m. and 8:00 a.m. on weekends.

Per Section 8.36.020 of the Kern County Code, these activities would require approval from the development services agency director or his or her designated representative if audible to a person with average hearing ability at a distance of 150 feet from a construction site, if the site is within 1,000 feet of an occupied residential dwelling. Per Section 5-1.412 of the California City Municipal Code, a variance can be requested for construction work outside of allowed hours; this variance is reviewed by California City’s Planning Commission that will consider the magnitude, uses, time, economic factors, and general public interest of the construction activities in granting the waiver.

Noise-sensitive receivers near project construction include single-family residences in Kern County and California City. These land uses would experience a temporary increase in noise during construction of the project.

Construction at Project Parcels

Table 4.12-7, *Noise Levels at Various Distances from Construction*, summarizes the estimated average noise level from construction of the project at the nearest noise-sensitive land use areas. Each noise-sensitive land use listed is the closest land use in that general area, and therefore noise-sensitive receivers in those general areas further away would experience lower noise levels.

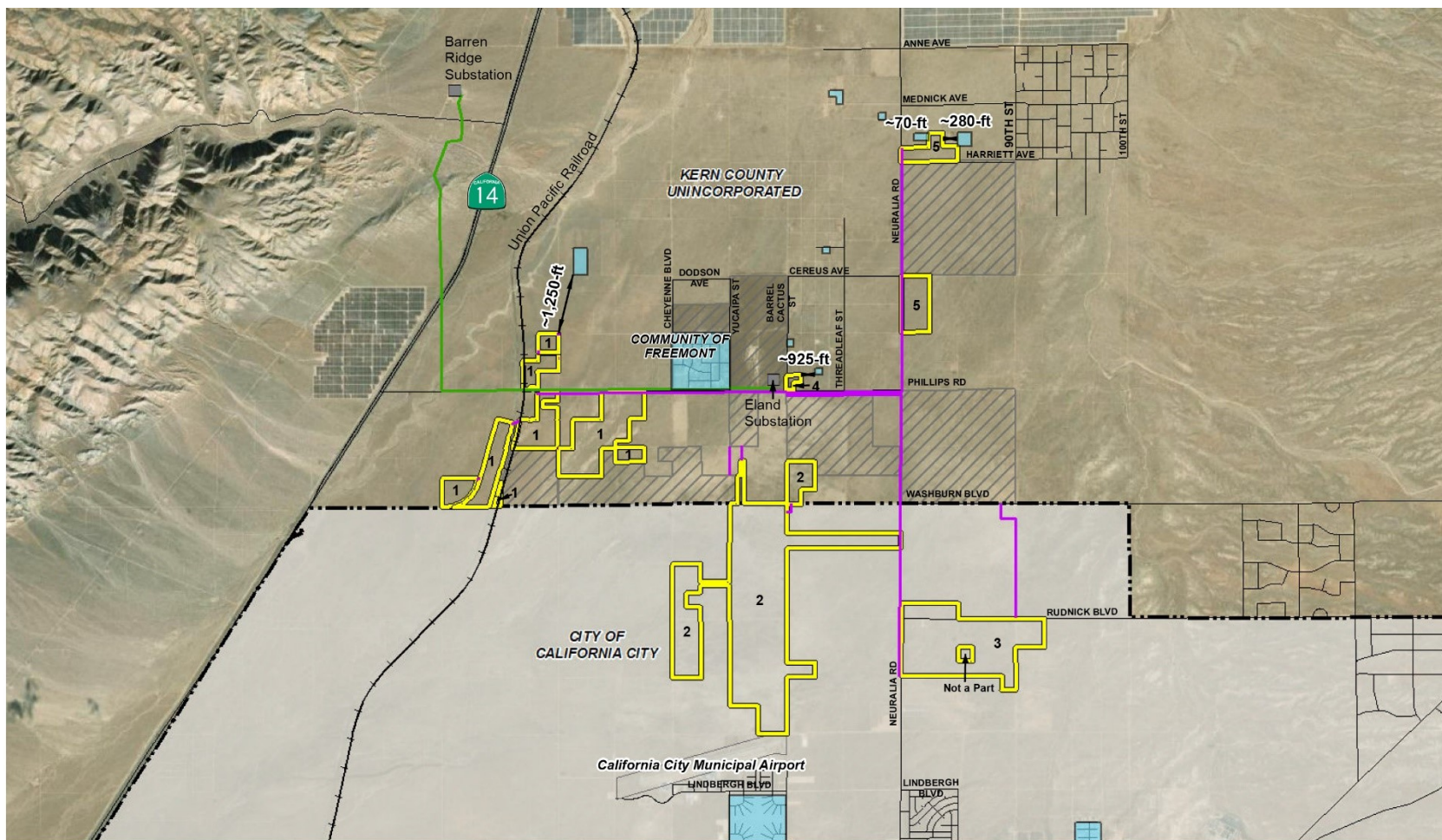
Table 4.12-7. Noise Levels at Various Distances from Construction

Receptor	Distance from Construction (feet)	Noise Level at Receptor (dBA L _{eq})
Reference distance	50	89
Single-family residence off Yerba Boulevard ¹	1,300	61
Single-family residence in California City ²	3,250	53

Source: Rincon 2020 (see Appendix J).
 Notes:
¹Closest noise-sensitive land uses from different areas of the project in Kern County.
²Closest noise-sensitive land use in California City.

As shown in Table 4.12-7, *Noise Levels at Various Distances from Construction*, although construction noise levels from simultaneous heavy equipment operation would reach 89 dBA L_{eq} at the reference distance of 50 feet, due to the large distance between construction at the project parcels and the nearest noise-sensitive receivers, construction noise levels under the conservative scenario analyzed would only reach as high as 61 dBA L_{eq}. Most construction activities would occur in the body of each parcel, farther from nearby noise-sensitive receivers than analyzed, and would therefore result in lower noise levels, especially in later construction phases when equipment with the loudest equipment, such as pneumatic tools and graders, would no longer be used. Heavy construction activity involving pneumatic tools and graders also would not occur during nighttime hours.

Per Section 8.36.020 of the Kern County Code, construction activities outside of acceptable hours would require approval from the development services agency director or designated representative if audible to a person with average hearing ability at a distance of 150 feet from a construction site, if the site is within 1,000 feet of an occupied residential dwelling. According to the technical Noise Study prepared for the proposed project (see Appendix J), the closest occupied residential dwelling is located approximately 1,300 feet from construction at the project parcels. However, County staff has reviewed the area and identified structures within the vicinity of the unincorporated Kern County portion of the project site that could be considered sensitive receptors. For analysis in this Draft EIR, these four sensitive receptors appear to be located at a closer distance than the abovementioned 1,300-foot data point and are shown in Figure 4.12-5, *Locations of Noise-Sensitive Receptors Closest to Project Site*.



Legend

- Kudu Project Boundary (# - Site Number)
- City/County Boundary
- Sensitive Receptors
- Eland Solar Project
- Collector Line
- Gen-Tie Line
- ~1,250-ft Approximate Distance to Nearest Sensitive Receptor



Source: Kern County, ArcGIS Online

ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

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Figure 4.12-5. Locations of Noise-Sensitive Receptors Closest to Project Site

Approximate distances between project boundaries and these structures are as follows: approximately 1,250 feet (APN 469-350-03); approximately 925 feet (APN 470-302-12); approximately 280 feet (APN 469-17012); and approximately 70 feet (469-170-09). Therefore, nighttime construction activities outside of permitted hours may require approval from the development services agency direction or designated representative. Nevertheless, construction noise generated at the project parcels would not have a significant impact with implementation of Mitigation Measures MM 4.12-1KC and MM 4.12-2KC, which would further reduce construction noise to the extent feasible.

The closest California City residences are located further away and therefore would be subject to noise levels of 53 dBA L_{eq} . These noise levels would be below California City's 60 dBA construction noise limit. However, construction may occur outside of California City's allowed construction hours (6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year, and no construction on Sundays or federal holidays). Per Section 5-1.412 of the California City Municipal Code, a variance can be requested for construction work outside of allowed hours; this variance is reviewed by California City's Planning Commission that will consider the magnitude, uses, time, economic factors, and general public interest of the construction activities in granting the waiver. Construction during these hours may exceed California City's single-family residential exterior noise standard of 50 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. and 45 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. Project parcel construction within 8,000 feet may exceed the 45 dBA L_{eq} from 10:00 p.m. to 7:00 a.m.. In accordance with the requirements of Section 5-1.412 of the California City Municipal Code, the project would obtain a variance if construction were to occur during the nighttime hours at these distances to California City residences. Therefore, impacts would be less than significant. Nevertheless, implementation of Mitigation Measures MM 4.12-1CC and MM 4.12-2CC would further reduce construction noise to the extent feasible.

Collector Lines Construction

The collector lines may be routed through Phillips Road adjacent to noise-sensitive receivers in the single-family residential neighborhood bordered by Yuma Street, Yucaipa Street, Cheyenne Boulevard, and Phillips Road in Kern County. Therefore, for the purposes of this analysis, at the closest point of construction, the collector lines would be located approximately 50 feet from single-family residences. These are the nearest sensitive receivers to any of the proposed collector line routes. Construction of the collector lines would potentially involve the use an auger drill rig, front end loader, grader, pickup truck, crane, and concrete mixer truck. Table 4.12-8, *Typical Noise Levels at Various Distances from Collector Line Construction*, shows construction noise levels at various distances from collector line construction activity, including those of the nearest noise-sensitive receivers, based on a standard noise attenuation rate of 6 dBA per doubling of distance for point sources of noise.

Table 4.12-8. Typical Noise Levels at Various Distances from Collector Line Construction

Receptor	Distance from Construction (feet)	Noise Level at Receptor (dBA L_{eq})
Reference distance	50	84
Single-family residence in Kern County ¹	50	84
Single-family residence in California City ²	8,300	40

Source: Rincon 2020 (see Appendix J).
Notes:
¹Closest noise-sensitive land use in the Kern County single-family neighborhood bordered by Yuma Street, Yucaipa Street, Cheyenne Boulevard, and Phillips Road in Kern County.
²Closest noise-sensitive land use in California City.

As shown in Table 4.12-8, *Typical Noise Levels at Various Distances from Collector Line Construction*, simultaneous heavy equipment use during collector line construction would generate noise levels up to 84 dBA L_{eq} at the nearest single-family residences in Kern County. Most construction activities would occur further from nearby noise receptors, and would, therefore, result in lower noise levels, especially in later construction phases when equipment with louder equipment, such as cranes and concrete mixer trucks, would no longer be used. Heavy construction activity involving cranes and concrete mixer trucks also would not occur during nighttime hours. Per Section 8.36.020 of the Kern County Code, construction activities outside of acceptable hours would require approval from the development services agency director or designated representative if audible to a person with average hearing ability at a distance of 150 feet from a construction site, if the site is within 1,000 feet of an occupied residential dwelling. Because sensitive receivers in Kern County are closer than 1,000 feet from collector line construction, County approval and implementation of a noise control plan would be required unless nighttime construction noise is determined to be inaudible to a person with average hearing ability at a distance greater than 150 feet. In addition, daytime construction noise levels in excess of 70 dBA L_{eq} could disturb nearby residents. Therefore, collector line construction noise would have a potentially significant temporary impact. Implementation of Mitigation Measures MM 4.12-1KC and MM 4.12-2KC would reduce impacts to less than significant. Collector line construction in Kern County would not be conducted within 1,000 feet of noise-sensitive receivers outside of the single-family neighborhood bordered by Yuma Street, Yucaipa Street, Cheyenne Boulevard, and Phillips Road.

The closest California City residences are located much further away and therefore would be subject to minor noise levels of 40 dBA L_{eq} . These noise levels would be below California City's 60 dBA construction noise limit. Although construction of the collector line may occur outside of California City's allowed construction hours, a noise level of 40 dBA L_{eq} would be below California City's nighttime exterior and interior noise standard of 45 dBA L_{eq} . Therefore, noise generated by construction activities at California City sensitive receivers would be less than significant. Nevertheless, implementation of Mitigation Measures MM 4.12-1CC and MM 4.12-2CC would further reduce construction noise to the extent feasible.

Cumulative On-Site Construction Noise

The cumulative on-site construction noise analysis makes a conservative assumption that construction at all project parcels and construction of the collector lines would occur simultaneously. Concurrent construction activity at more than one parcel and the collector lines may expose nearby residences to cumulative noise impacts. Some residences located in Kern County would be exposed to adjacent construction noise from collector line construction and more distant noise from construction at the project parcels. Specifically, collector line and project parcel construction may occur as close as 50 and 2,000 feet, respectively, from the single-family residences located along Phillips Road. However, construction noise levels generated at project parcels located at a distance ranging from 2,000 to 4,500 feet were also cumulatively considered in Table 4.12-9, *Cumulative Construction Noise Levels for Worst-Case Scenario*. As shown in Table 4.12-9, *Cumulative Construction Noise Levels for Worst-Case Scenario*, the cumulative construction noise levels for project construction could reach approximately 84 dBA L_{eq} .

Per Section 8.36.020 of the Kern County Code, construction activities outside of acceptable hours would require approval from the development services agency director or designated representative if audible to a person with average hearing ability at a distance of 150 feet from a construction site, if the site is within 1,000 feet of an occupied residential dwelling. Because sensitive receivers in Kern County are closer than 1,000 feet from collector line construction, County approval and implementation of a noise control plan

would be required unless nighttime construction noise is determined to be inaudible to a person with average hearing ability at a distance greater than 150 feet. In addition, daytime construction noise levels in excess of 70 dBA L_{eq} could disturb nearby residents. Therefore, cumulative construction noise would have a potentially significant temporary impact. However, implementation of Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC would reduce impacts to a less than significant level.

Table 4.12-9. Cumulative Construction Noise Levels for Worst-Case Scenario

Project Site	Distance from Construction (feet)	Noise Level at Receptor (dBA L_{eq})
Project Parcel	2,000	52
Project Parcel	3,100	48
Project Parcel	3,500	57
Project Parcel	3,600	57
Project Parcel	4,500	45
Cumulative Noise Level¹		84
Source: Rincon 2020 (see Appendix J).		
Notes:		
1. The cumulative noise level was calculated at the sensitive receptor (i.e. single-family residence off Morongo Drive near Phillips Road in Kern County) situated adjacent to collector line construction and closest to construction at the project parcels to provide a worst-case scenario.		

Decommissioning

At the end of the project's useful life (anticipated to be 30 to 40 years), the solar facility and associated infrastructure may be decommissioned in accordance with then-current decommissioning practices. Given the project's operating life cycle and distant time frame for decommissioning activities, it is too speculative to quantify the potential noise impacts that could occur during decommissioning activities. At such time the project is decommissioned, equipment operation and site restoration activities would result in a temporary increase in ambient noise levels in the project area. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to project construction activities. Similar to the construction noise analysis above, decommissioning of the project would result in potentially increased noise levels when compared to existing conditions. Therefore, it is recommended that Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC be implemented during decommissioning activities to reduce temporary noise levels at off-site receptors. With implementation of Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC, noise impacts from decommissioning would be less than significant.

Construction Traffic Noise

Construction of the project would increase traffic noise offsite from commuting construction workers and from haul trucks bringing materials to and from the project site. As mentioned previously, project components would be constructed simultaneously over a 12- to 18-month period. This could expose nearby residences to cumulative noise from construction traffic. Table 4.12-10, *Construction Traffic Noise*, shows modeled traffic noise levels at the nearest receivers under existing traffic conditions and with construction traffic.

As shown in Table 4.12-10, *Construction Traffic Noise*, construction traffic would increase noise levels by up to 5 dBA L_{eq} at the nearest sensitive receivers from project construction. However, none of the traffic

noise increase would exceed the applicable FTA criteria of 5 dBA L_{eq} . Therefore, the short-term increase in traffic noise from project construction would be less than significant.

Table 4.12-10. Construction Traffic Noise

Roadway	Nearest Sensitive Receiver	Distance from Roadway to Nearest Sensitive Receiver (feet)	Existing Traffic Noise (dBA L_{eq})	With Construction Traffic Noise (dBA L_{eq})	Change in Traffic Noise (dBA L_{eq})	FTA Allowable Noise Exposure Increase (dBA L_{eq})
SR 14	Single-family residences in Kern County	300	54	55	1	5
Phillips Road	Single-family residences in Kern County	80	53	58	5	5
Neuralia Road	Single-family residences in Kern County	105	52	57	5	5

Source: Rincon 2020 (see Appendix J).

On-Site Operational Noise

The project would operate continuously, seven days a week, until the anticipated repowering or decommissioning of the project in 30 to 40 years. Stationary noise sources during operation would include PV solar arrays with associated electrical equipment (such as O&M and maintenance facility. Table 4.12-11, *Estimated Noise Rating for Equipment Utilized During Project Operations*, lists reference noise levels of equipment used for similar solar projects that are assumed to be used on the project site.

Table 4.12-11. Estimated Noise Rating for Equipment Utilized During Project Operations

Equipment Type	Reference Noise Level (dBA L_{eq})	Distance from Source (feet)
PV Panel	44	50
500+ kW Inverter (unenclosed)	52	75
Transformer	58	3.3
Inverter HVAC System	58	75

Source: Rincon 2020 (see Appendix J).

Solar Array Noise

Stationary noise sources associated with the solar array include electrical equipment (i.e., transformers and inverters) and potentially heating, ventilation, and air conditioning (HVAC) systems. Transformers would be located within the inverters, which would lie within an enclosed or canopied metal structure. The noise from transformers is produced by alternating current flux in the core, which causes it to vibrate. Within enclosures, inverters typically produce a noise level of 58 dBA L_{eq} at the source (Monterey County 2014). However, enclosed inverters may also include HVAC systems mounted on the exterior of the inverter enclosure, which would generate a noise level of 58 dBA at a distance of 75 feet; refer to Table 4.12-11, *Estimated Noise Rating for Equipment Utilized During Project Operations*. A fully enclosed metal structure would attenuate noise from inverter stations more effectively than a canopy structure with open walls. As shown in Table 4.12-11, *Estimated Noise Rating for Equipment Utilized During Project Operations*, open

inverters would generate a noise level of approximately 52 dBA at a distance of 75 feet. It is unknown at this time whether the inverters/transformers would be enclosed or open. This would be determined during design once the inverter/transformer manufacturer has been selected.

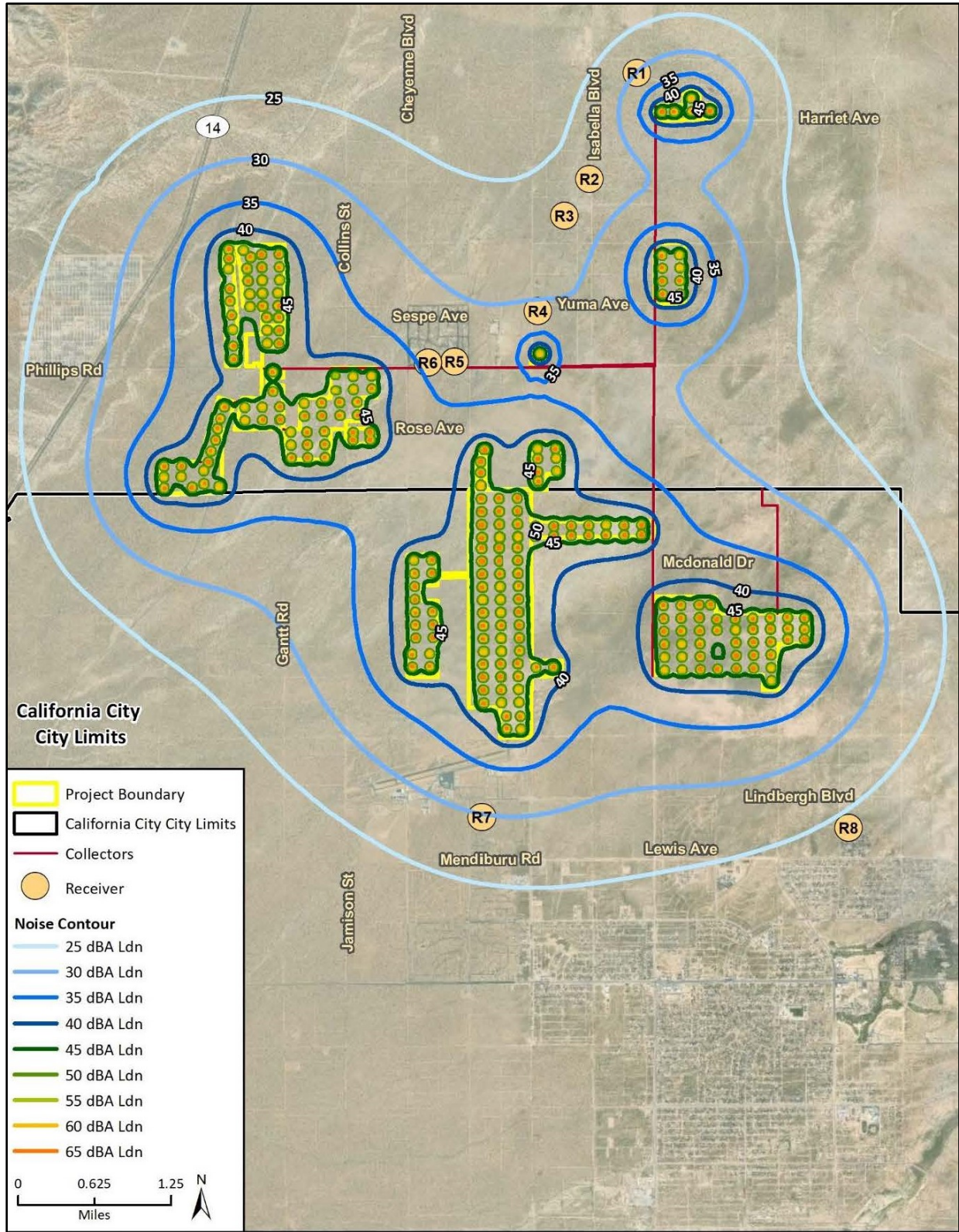
As the closed inverter would generate a higher noise level than an open inverter, due to the inclusion of HVAC units, the enclosed inverters are conservatively used for this analysis. Combined noise levels from the project's solar array operations (transformers, inverters, and HVAC systems), which would be anticipated to be operated simultaneously, are shown in Table 4.12-12, *Operational Noise Levels at Nearest Sensitive Receivers*, and noise level contours and receiver locations are shown in Figure 4.12-6, *Receiver Locations and Operational Noise Contours*.

Sensitive receivers nearby the project parcels include rural single-family residences in Kern County and single-family residences located in the northern neighborhoods of California City. As shown in Table 4.12-12, *Operational Noise Levels at Nearest Sensitive Receivers*, operational noise levels from the project site would reach up to 34 dBA L_{dn} at Kern County sensitive receivers and 23 dBA L_{eq} at California City sensitive receivers. These noise levels would be well below Kern County's standard of 65 dBA L_{dn} for exterior noise at the nearest noise-sensitive receptors or California City's 50 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. and 45 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. noise limits for residences. Therefore, the project would not expose persons to or generation of noise levels more than established standards during operation or create a substantial increase in ambient noise levels at the nearest offsite sensitive receptor. Thus, solar array noise would have a less than significant impact on noise-sensitive receptors.

Table 4.12-12. Operational Noise Levels at Nearest Sensitive Receivers

Receiver	Description	Jurisdiction	Noise Level at Receiver		Exceed Threshold?
			dBA L _{eq}	dBA L _{dn}	
R1	Esther Avenue Residence	Kern County	24	30	No
R2	Isabella Boulevard Residence	Kern County	21	27	No
R3	Near Dodson Avenue and Isabella Boulevard	Kern County	21	27	No
R4	Yerba Boulevard Residence	Kern County	25	31	No
R5	Southeast Phillips Road Residence	Kern County	27	33	No
R6	Southwestern Phillips Road Residence	Kern County	28	34	No
R7	Residence south of Lindbergh Boulevard	California City	23	30	No
R8	Denhart Avenue Residence	California City	18	24	No

Source: Rincon 2020 (see Appendix J).



ZCC 24, Map No. 152
CUP 28, Map No. 152

GPA 10, Map No. 152
CUP 19-04 (California City)

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Figure 4.12-6. Receiver Locations and Operational Noise Contours

PV Panel

PV panel noise would come from the tracking motors. These systems involve the panels being driven by motors to make brief, incremental adjustments to track the arc of the sun to maximize the solar effect. While tracking motors may generate noise of up to 44 dBA at 50 feet, tracking motors would operate briefly throughout an hour (e.g., several minutes per hour) as the sun moves west across the sky, and then would reset at night to face the eastern sky. By operating only several minutes per hour, the hourly noise level would be negligible at the nearest sensitive receivers. In addition, as observed during a site visit to the area and viewing of existing solar farms in the area, noise levels from PV panel tracking were not detected over the existing ambient noise sources in the area (i.e., wind, vehicles, planes, and trains) just outside of the solar properties. Therefore, noise levels from the PV panels would be less than significant.

Substation/Energy Storage System

The substation and energy storage systems would collect, transmit, and store energy generated by the solar arrays. Noise generated by these facilities may include HVAC units. However, the PV array transformers and inverters, analyzed earlier in this section, would include a much larger number of HVAC units for the inverters and additional noise from the transformers. As the PV array (i.e., transformers, inverters, and HVAC units) would be spread across the project site, noise levels generated by the PV array would be more prominent than noise generated by the substation and energy storage system, which would be located in one area of the project site. In addition, as observed during a site visit to the project area and viewing of existing solar development in the project vicinity, noise levels from substations and energy storage systems were not detected over the existing ambient noise sources in the area (i.e., wind, vehicles, planes, and trains) just outside of the solar properties.

Therefore, the project would not expose persons to generation of noise levels above established standards during operation or create a substantial increase in ambient noise levels at the nearest offsite sensitive receptor. Operational noise from the substation/energy storage system would be less than significant.

Operational Traffic Noise

Once the project is constructed, the project would generate approximately 88 vehicle trips associated with operations and maintenance of the solar facility. In addition, the project would require occasional nighttime activities, including deliveries, repairs, maintenance, office and administrative activities, security personnel, and emergency response.

As shown in Table 4.12-13, *Operational Traffic Noise*, existing roadways generate noise levels ranging from 52 to 54 dBA L_{eq} at the nearest sensitive receivers (i.e., single-family residences). Pursuant to FTA criteria, noise impacts would occur if changes in roadway noise levels exceed 5 dBA. With the relatively minor increase in traffic volumes from project operations (i.e., 88 trips), traffic noise levels would increase by 1 dBA or less; refer to Table 4.12-13, *Operational Traffic Noise*. Therefore, the FTA criteria would not be exceeded and project-generated operational traffic noise levels would be imperceptible at the nearest sensitive receivers (i.e., single-family residences). Impacts would be less than significant in this regard.

Table 4.12-13. Operational Traffic Noise

Roadway	Nearest Sensitive Receiver	Distance from Roadway to Centerline to Nearest Sensitive Receiver (feet)	Existing Traffic Noise (dBA L _{eq})	With-Operational Traffic Noise (dBA L _{eq})	Change in Traffic Noise (dBA L _{eq})	FTA Allowable Noise Exposure Increase (dBA L _{eq})
SR 14	Single-family residences in Kern County	300	54	54	<1	5
Phillips Road	Single-family residences in Kern County	80	53	54	1	5
Neuralia Road	Single-family residences in Kern County	105	52	52	<1	5

Source: Rincon 2020 (see Appendix J).

Mitigation Measures

Kern County

MM 4.12-1KC: To reduce temporary construction-related noise impacts, the following shall be implemented by the project proponent/operator:

- 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. The construction contractor shall establish a Noise Disturbance Coordinator for the proposed 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.

- c. During all construction or decommissioning phases of the proposed project located within the limits of unincorporated Kern County, the construction contractor shall limit all onsite noise-producing activities to the hours of 6:00 a.m. to 9:00 p.m., Monday through Friday, and to the hours of 8:00 a.m. and 9:00 p.m. on Saturdays and Sunday or as required through the Kern County Noise Ordinance (Kern County Code of Ordinances, Title 8, Chapter 8.36.020).
- d. If construction-related activities must occur outside of permitted hours per Section 8.36.020 of the Kern County Code, the project proponent/operator shall obtain approval from the development services agency director or designated representative for project construction activities occurring between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends, within 1,000 feet of an occupied residential building, if audible to a person with average hearing ability at a distance of 150 feet from a construction site. As a condition of approval for exempting construction activity outside of permitted hours, the project proponent/operator shall implement a noise control plan including appropriate noise-reduction measures to the satisfaction of the development services agency director or designated representative, which may include the measures listed above. In addition, the noise control plan may include a requirement to restrict the duration of construction activities outside of permitted hours within 1,000 feet of an occupied residential building.
- e. 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).
- f. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).
- g. 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 4.12-2KC: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice.

- a. The mailing notice shall be to all residences within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include: the construction schedule, 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.

City of California City

MM 4.12-1CC: To reduce temporary construction-related noise impacts, the following shall be implemented by the project proponent/operator:

- 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. The construction contractor shall establish a Noise Disturbance Coordinator for the proposed 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 California City Community Development Department prior to commencement of any ground disturbing activities.
- c. During all construction or decommissioning phases of the proposed project located within the limits of California City, the construction contractor shall limit all onsite noise-producing activities to the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year or as required through Section 5-1.407 of the California City Municipal Code.
- d. If construction-related activities must occur outside of permitted hours per Section 5-1.407 of the California City Municipal Code, the project proponent/operator shall file an application with the Health Officer for a variance. The project proponent/operator shall set forth actions taken to comply with the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for accomplishment. The application shall be accompanied by a fee in the amount established from time to time by resolution. A separate application shall be filed for each noise source. Several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of the application and fee, the Health Officer shall refer it with a recommendation within 30 days to the Planning Commission.

- e. 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).
- f. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).
- g. 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 4.12-2CC: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice.

- a. The mailing notice shall be to all residences within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include: the construction schedule, 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 California City Community Development Department.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.12-1KC and MM 4.12-2KC, temporary impacts associated with construction and decommissioning activities of the solar arrays within unincorporated Kern County would be considered less than significant. Operational impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.12-1CC and MM 4.12-2CC, temporary impacts associated with construction and decommissioning activities of the solar arrays within the City of California City would be considered less than significant. Operational impacts would be less than significant.

Impact 4.12-2: The project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.

Construction

Solar Array and Related Ancillary Facilities

Project construction may require operation of post driving and vibratory rollers, which have the potential to result in temporary vibration impacts on structures and humans. Based on the potential project parcel site locations, post driving activities could occur within 1,300 feet of the nearest off-site residential structure in Kern County and 3,250 feet of the nearest off-site residential structure in California City as identified by the Noise Impact Analysis. As noted previously, the four potential sensitive receptors identified by County Staff to be as close as 70 feet from the project boundary are more likely to be exposed to such driving activities in these instances (see Figure 4.12-3, *Locations of Noise-Sensitive Receptors Closest to Project Site*, for reference). As impact pile drivers have higher vibration levels than vibratory pile drivers, the potential vibration impact calculations used for project evaluation assume that impact pile drivers would be used. Other construction activities are less intensive than pile driving and would generate lower ground-borne vibration. Therefore, vibration levels from pile driving activities are considered the worst-case scenario for construction at the project parcels.

Based on Caltrans vibration guidance, vibration velocities from post drivers would be approximately 0.002 in/sec PPV at the nearest Kern County residential structure and approximately 0.0002 in/sec RMS at the nearest California City residential structure. Therefore, vibration generated from post drivers at the nearest Kern County residential structure would not exceed the Caltrans continuous/frequent intermittent sources threshold for damage potential to older residential structures (i.e., 0.3 in/sec PPV) or the strongly perceptible human annoyance threshold (i.e., 0.10 in/sec PPV). Further, vibration velocities from post drivers would not exceed the California City vibration threshold (i.e., 0.05 in/sec RMS) pursuant to California City Municipal Code Section 5-1.410. Therefore, vibration impacts associated with construction of the proposed project would be less than significant.

Operation

Once constructed, the project would have operation and maintenance components, such as HVAC systems, maintenance vehicles, inverters, and transformers, that would not generate noticeable ground-borne vibration levels. Project operations would not involve any sources capable of generating perceptible levels of vibration in the surrounding area. Therefore, vibration impacts from operational activities would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.12-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

As discussed under Impact 4.12-1, project operational noise levels would result in a less than significant impact. Furthermore, noise levels from project operation would not exceed the County's standard of 65 dBA L_{dn} . The proposed solar arrays, tracking motors for PV panel adjustments, and substation/energy storage system would result in noise that would not be perceptible above background noise levels at the nearest sensitive receptors located in the community of Fremont in Kern County [approximately 1,200 feet from the western project parcels (Site 1)], and/or at the nearest residences in California City (approximately 3,300 feet from the southernmost project parcel). Operational traffic noise levels from project operation would increase by 1 dBA or less; refer to Table 4.12-13, *Operational Traffic Noise*. Therefore, the FTA criteria would not be exceeded and project-generated operational traffic noise levels would be imperceptible at the nearest sensitive receivers (i.e., single-family residences). Impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.12-4: The project would expose people residing or working in the project area to excessive noise levels, for a project located within the Kern County Airport Land Use Compatibility Plan.

The southern portion of the project site is located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP). The project site is located immediately north of the California City Municipal Airport. Specifically, the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). According to Kern County ALUCP Table 2A, *Compatibility Criteria*, Compatibility Zone B1 is subject to substantial noise levels and Compatibility Zone C is subject to frequent noise intrusion.

As discussed in the *Technical Guidance for Evaluating Selected Solar Technologies on Airports* by the FAA, “solar facilities are generally a compatible land use at airports because of their low profile and ease of integration with existing facilities” (FAA 2018). While the proposed project is not located on airport property, the proposed project would provide a buffer between more dense development and the California City Municipal Airport. Further, the project would not contain habitable structures that would subject occupants to aircraft noise.

The project would be consistent with the County’s ALUCP and would be required to comply with applicable FAA regulations. Kern County’s ALUCP consistency review process would identify and minimize any potential conflict with airport operations, while the FAA’s review would ensure that project infrastructure does not present an aeronautical hazard. As discussed in Section 4.9, *Hazards and Hazardous Materials*, implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County and California City by requiring the developer to coordinate with the Department of Defense (DoD), FAA, and the public airports and military installations in the area. With implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC, impacts would be less than significant.

Mitigation Measures**Kern County**

Implement Mitigation Measure MM 4.9-3KC (see Section 4.9, *Hazards and Hazardous Materials*, for full text).

City of California City

Implement Mitigation Measure MM 4.9-3CC (see Section 4.9, *Hazards and Hazardous Materials*, for full text).

Level of Significance after Mitigation**Kern County**

With incorporation of Mitigation Measure MM 4.9-3KC, impacts would be less than significant.

City of California City

With incorporation of Mitigation Measure MM 4.9-3CC, 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 facilities, are proposed throughout Kern County. As listed in Table 3-3, *Cumulative Projects List*, and shown in Figure 3-20, *Cumulative Projects Map*, many are located in the Mojave Desert, similar to the project site. Several other large solar projects may be developed in the areas surrounding the project site in the future, including the Eland Solar Project and Bellefield Solar Project. Additionally, other related projects in the surrounding areas include: (1) projects submitted for plan processing; (2) projects approved by the County of Kern; and/or (3) projects engaged in active construction programs.

Cumulative Construction Noise

Due to the localized nature of noise impacts, cumulative impacts would be largely limited to areas within the general vicinity (i.e., within approximately 1,000 feet) of the project site. Construction activities associated with the proposed project and cumulative projects may overlap, resulting in construction noise in the site vicinity. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. The closest cumulative project would be the Eland Solar Project, located adjacent to the project site; refer to Figure 3-20, *Cumulative Projects Map*. Cumulatively significant noise would generally occur when construction activities on either project site occurs in close proximity in a way that concentrates noise. The nearest sensitive receptors to the Eland Solar Project and proposed project are single-family residential uses located north of Phillips Road. These receptors could be exposed to increased noise levels during the simultaneous construction of the Eland Solar Project and the proposed project. However, the specific construction phasing/timing and precise location(s) of construction activities, staging equipment, grading areas, etc., at the Eland Solar Project site are unknown at this time. Therefore, it would be speculative to quantify cumulative construction noise levels at nearby receptors. Additionally, at receptor locations farther than 1,000 feet from the project site, project-generated construction noise would diminish to near ambient levels and would not result in a cumulatively considerable contribution to construction noise levels associated with other construction projects.

In addition, cumulative projects within the project area would also be subject to Kern County and/or California City noise standards and established thresholds pertaining to increased noise at the locations of sensitive receptors, as well as similar mitigation measures. As discussed above, the project's short-term construction noise impacts would be reduced to a less than significant level with implementation of Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC. Therefore, the project's contribution to cumulative noise impacts would not be cumulatively considerable. In addition, construction activities at the Eland Solar Project site would be required to comply with Kern County noise standards and established thresholds pertaining to increased noise at the locations of sensitive receptors, as well as similar mitigation measures. Therefore, a less than significant cumulative impact would occur in this regard.

The project site is located within Compatibility Zone B1 and Zone C of the California City Municipal Airport. Implementation of Mitigation Measures MM 4.9-3KC and MM 4.9-3CC (see Section 4.9, *Hazards and Hazardous Materials*) would ensure the proposed project would be consistent with the ALUCP and

General Plan policies of Kern County by requiring the developer to coordinate with the Department of Defense and FAA, as well as public airports and military installations in the area. Thus, the project would not combine with any other to become cumulatively significant and there would be less than significant cumulative impacts associated with airports.

Cumulative Vibration

As stated above, construction activities associated with the proposed project and cumulative projects may overlap. Despite the potential for overlap, ground-borne vibration generated at the project site during construction would not be in exceedance of the Caltrans thresholds (i.e. 0.3 in/sec PPV for older residential structures and 0.10 in/sec PPV for human annoyance) or California City vibration threshold (i.e., 0.05 in/sec RMS). In addition, there would be no vibration impacts associated with operations at the project site.

The nearest cumulative project is the Eland Solar Project, located adjacent to the project site; refer to Figure 3-20, *Cumulative Projects Map*. Although construction of this cumulative project may occur at the same time as the proposed project, cumulatively significant construction vibration would generally only occur when construction activities on the sites occur in close proximity of one another in a way that concentrates the vibration. The further construction activities occur from one another on each respective project site, the quicker the vibration dissipates by the time it reaches a sensitive receptor. Additionally, because heavy construction equipment moves around a project site and would only occur for limited durations, average vibration levels at the nearest structures would diminish with increasing distance between the structures and construction activities. As such, cumulative construction-related vibration impacts would be less than significant.

Both the proposed project and cumulative development projects would be required to comply with Kern County's limitations on allowable hours for construction and mitigate their respective construction vibration impacts, as required. Therefore, the project's incremental contribution to cumulative construction-related vibration impacts would be less than cumulatively considerable.

Cumulative Operational Noise

Although the related cumulative projects have been identified within the project study area, the noise generated by operations (i.e., vehicles and stationary sources) cannot be quantified due to the speculative and conceptual nature of each development. However, each cumulative project would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify necessary attenuation measures, where appropriate. Additionally, as noise dissipates as it travels away from its source, noise impacts from stationary sources would be limited to each of the respective sites and their vicinities.

The nearest cumulative project to the project site is the Eland Solar Project, located adjacent to the project site; refer to Figure 3-20, *Cumulative Projects Map*. As noted above, the proposed project would not result in significant traffic or stationary noise impacts; refer to Table 4.12-12, *Operational Noise Levels at Nearest Sensitive Receptors*, and Table 4.12-13, *Operational Traffic Noise*. Furthermore, as discussed above, the long-term noise impacts associated with operation and maintenance of the project would not result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, operational noise from the proposed project would not combine with such noise from other pending projects, and cumulative operational impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.9-3KC (see Section 4.9, *Hazards and Hazardous Materials*), MM 4.12-1KC, and MM 4.12-2KC.

City of California City

Implement Mitigation Measures MM 4.9-3CC (see Section 4.9, *Hazards and Hazardous Materials*), MM 4.12-1CC, and MM 4.12-2CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.9-3KC, MM 4.12-1KC, and MM 4.12-2KC, cumulative impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.9-3CC, MM 4.12-1CC, and MM 4.12-2CC, cumulative impacts would be less than significant.

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4.13.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to public services, including fire and police protection services for the proposed project. It also describes the impacts associated with public services that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. Information for this section was taken from numerous sources, including websites and service agency plans.

4.13.2 Environmental Setting

Fire Protection

The Kern County Fire Department (KCFD) and City of California City Fire Department (CCFD) would provide fire suppression and emergency medical services to the project area.

Kern County Fire Department

The portion of the project site located within Kern County would be served by Fire Station No.14 located at 1953 State Route (SR) 58 in Mojave. Station No. 14 is located approximately 13 miles southwest of the project site.

The KCFD has over 625 permanent employees protecting an area over 8,000 square miles. Fire protection services are provided for over 500,000 citizens living in the unincorporated areas of Kern County and the cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. Over 546 uniformed firefighters are stationed in 46 fire stations throughout Kern County. Added to this, the KCFD has 14 mutual aid agreements with neighboring fire suppression organizations to further strengthen the emergency services available. The KCFD is equipped with 55 fire engines, 4 ladder trucks, 41 patrol vehicles, 25 command vehicles, 2 helicopters, and other ancillary equipment (KCFD 2021). KCFD has experienced several budget and staffing cuts in recent years but was approved for a new budget by the Kern Board of Supervisors on August 25, 2020, granting the Fire Department funds to continue protecting the community (23ABC News 2020a). Additionally, KCFD was awarded 2.9 million dollars by the Federal Emergency Management Agency (FEMA) from the Assistance to Firefighters Grant for critically needed equipment (23ABC News 2020b).

CalFire Fire Hazards Severity Zone Maps (FHSZs) are based upon factors such as fuel, slope, and fire weather to identify the degree of fire hazard throughout California (e.g., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and are therefore of greater concern. According to the FHSZ map published by CalFire, the project site is not located within or near state responsibility areas (SRAs) or lands classified as very high fire hazard severity zones (VHFHSZ). The nearest VHFHSZ is located more than 3 miles away

from the project site (CalFire 2007a); refer to Figure 4.17-1, *State Responsibility Areas*. The project site is classified as Local Responsibility Area (LRA) Moderate; thus, the potential for wildfire on the project site exists, but is not considered high and is not anticipated to physically impede existing emergency response plans, emergency vehicle access, or emergency personnel access to the site (CalFire 2007b); refer to Figure 4.17-2, *Local Responsibility Areas*.

Fire Station No. 14 (Mojave) would be the primary responder to a fire or emergency at the project site. In the event of a major fire or when short-staffed, other stations would be called on to respond, as necessary, including Fire Station No. 15 (Rosamond), located at 35th Street West, Fire Station No. 12 (Tehachapi), located at 800 South Curry Street, and Fire Station No. 13 (Tehachapi), located at 21415 Reeves Street. Information on the four closest fire stations to the project site is included in Table 4.13-1, *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. In remote County areas like the project site, the average response time is approximately 21 minutes (CPSM 2019).

Table 4.13-1. List of Nearby Fire Stations

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Fire Station No. 14	1953 SR 58 Mojave, CA 93560	13 miles southwest of the northern portion of the project site
KCFD	Fire Station No. 15	3219 35th Street West Rosamond, CA 93560	23 miles southwest of the southern portion of the project site
KCFD	Fire Station No. 12	800 South Curry Street Tehachapi, CA 93561	25 miles west northwest of northern portion of the project site
KCFD	Fire Station No. 13	21415 Reeves Street Tehachapi, CA 93561	26 miles west northwest of northern portion of the project site

Kern County has 23 mutual-aid agreements with neighboring fire suppression organizations to further strengthen the emergency services (CPSM 2019). The KCFD has a mutual aid agreement with the Los Angeles County Fire Department (LACFD) in the event that KCFD is unable to be the primary responder to an emergency. The LACFD has 175 fire stations throughout Los Angeles County. The LACFD is divided into 22 battalions with over 5,000 personnel (LACFD 2020). The nearest LACFD fire station to the project site is Station No. 112, located at 8812 W. Avenue E-8, Lancaster, approximately 20.5 miles southwest of the project site. As previously mentioned, the project site is within an area of moderate fire hazard, as determined by Cal Fire (Cal Fire 2007b).

Kern County applies and utilizes the National Fire Code (as 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 (EMS) Division is the lead agency for the emergency medical services system in Kern County and is responsible for coordinating all system participants in the County, which include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and emergency medical technician (EMT) training programs throughout the County. EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to a hospital setting. EMS covers day-to-day emergencies, disaster medical response planning and preparation, and preventative health care. The department also provides certification and recertification for EMTs, paramedics, specialized nurses, and specialized dispatchers (Kern County Public Health Services Department 2020). The nearest hospitals are

the Antelope Valley Hospital, located at 1600 West Avenue J, in the City of Lancaster, approximately 33 miles to the southwest and the Adventist Health Tehachapi Valley Hospital, located at 1100 Magellan Drive in the City of Tehachapi, approximately 25 miles to the west.

City of California City Fire Department

The portion of the project site located within the City of California City would be served by Station #85, located at 20890 Hacienda Boulevard in California City, approximately 4.5 miles south of the project site. According to the 2019 CCFD Annual Report, the CCFD is staffed with six firefighter paramedics, three fire apparatus engineers, and three fire captains (CCFD 2019). The CCFD firefighter/paramedics have specialized training in auto extrication, hazardous materials mitigation, technical rescue, and all aspects of fire prevention and suppression delivery. Firefighter/paramedics are able to deliver prompt care in all given situations. Additionally, there are fire suppression personnel that are trained to the level of EMT to assist the firefighter/paramedics. The CCFD has mutual aid agreements with the KCFD, the East Kern Airport District Fire Department, and the Bureau of Land Management.

The City of California City applies and utilizes the National Fire Code (as set forth by the National Fire Protection Association), the California Fire Code, the California Building Code, and the California City Ordinance Code to regulate fire safety.

Law Enforcement Protection

The Kern County Sheriff's Office (KCSO) and City of California City Police Department (CCPD) would provide law enforcement services to the project area.

Kern County Sheriff's Office

The KCSO provides basic law enforcement services in the unincorporated areas of the County, which includes the project area. The KCSO enforces local, State, and federal laws and is responsible for crime prevention, field patrol (ground and air), crime investigation, the apprehension of offenders, regulation of noncriminal activity, and related support services, such as patrolling off-highway vehicle recreation areas in the desert and mountainous areas of the County. Traffic and parking control functions are also provided along with some investigation of property damage reports and traffic accidents. Complete investigations are conducted for injury, fatal, intoxication-related, and hit-and-run accidents.

The KCSO has a total of 1,202 employees including 567 authorized deputy sheriff positions, 338 detention deputy positions, and 297 sheriff's professional support staff (KCSO 2021a). The nearest substation is the Mojave Substation, located approximately 12 miles southwest at 1771 Highway 58 in Mojave. The substation provides law enforcement services to approximately 14,000 people in the greater Mojave area, and the communities of Cantil, Fremont Valley, Boron, North Edwards, Aerial Acres, Desert Lake, and the military complex at Edwards Air Force Base (KCSO 2021b).

Other substations in proximity to the project site include the Rosamond Substation, Tehachapi Substation and Boron Substation. Information on the four closest substations to the project site is included in Table 4.13-2, *List of Nearby Sheriff Substations*.

Table 4.13-2. List of Nearby Sheriff Substations

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	Mojave Substation	1771 State Highway 58 Mojave, CA 93501	12 miles southwest of the project site
KCSO	Rosamond Substation	1379 Sierra Highway Rosamond, CA 93560	23 miles south of the project site
KCSO	Tehachapi Substation	22209 Old Town Road Tehachapi, CA 93581	27 miles southwest of the project site
KCSO	Boron Substation	26949 Cote Street Boron, CA 93516	23 miles southeast of the project site

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given first priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Response times naturally vary depending on the severity of the call, available staff, and location of patrol car. Average response time for the KCSO is five minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening). In 2018, the KCSO reported that the County's fiscal emergencies have impacted and affected staffing and have created a number of shortages in the East Kern area, including Mojave. This could mean potential delays in response times due to a limited budget, and consequently, less staff (Barnwell 2018).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a nonemergency call could be eight minutes or more, depending on staffing and the number of other calls for service. In some areas, response may not occur at all for nonemergency calls due to funding deficiencies.

The Kern County Fiscal Year 2020-21 Recommended Budget (Kern County 2020b) shows ongoing deficiencies in funding for staffing, training and equipment. While the adopted Budget provides a transfer from the General Fund reserves to prioritize law enforcement, the CAO report confirms this is not sustainable.

Off-Highway Vehicle Enforcement Team

In 2000, the KCSO created the Off-Highway Vehicle (OHV) Enforcement Team that can be deployed to off-road riding areas and adjacent communities in Kern County, as needed. The goal of the OHV Enforcement Team is to provide a safe and secure environment for the OHV community and nearby residents, and to help protect sensitive natural resources. Kern County attracts over 800,000 visitors a year to the local OHV riding areas and approximately 500,000 visitors in the east Kern area. The OHV Enforcement Team patrols numerous off-road riding areas in Kern County, including a popular riding area near a portion of the Pacific Crest Trail that runs through Rosamond, Mojave, and Tehachapi (KCSO 2021). The OHV Enforcement Team works closely with officers from the Bureau of Land Management (BLM), California State Parks, and other local law enforcement agencies.

City of California City Police Department

The portion of the project site located within the City of California City would be served by the station located at 21130 Hacienda Boulevard in California City. The station is located approximately 4 miles south of the project site. The CCPD is staffed with 13 sworn officers and 6 non-sworn personnel. Officers serve in assignments such as uniformed patrol, investigations, off-road search and rescue, and the Special Enforcement Team (CCPD 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 and to emergency incidents on California highways, and provides service and assistance to disabled vehicles. The CHP has a mutual aid agreement with the KCSO. The CHP is divided into eight divisions.

CHP officers patrol 380,000 miles of roadway and implement the CHP's other law enforcement activities (e.g., drug interception, vehicle theft investigation and prevention, vehicle inspections, accident investigations, and public awareness campaigns), with the support of the non-uniformed personnel assigned to area and division offices.

The project site is within the jurisdiction of the Inland Division, which has 12 offices and 3 communications and dispatch centers, and includes the most intensely congested roads in the nation, at the intersections of Interstates 10, 15, 215, and Highways 210, 91, 71 and 60 (CHP 2021). This division includes the Special Enforcement Unit, with eight officers and six specially trained dogs that have received honors at the local, State, and national level for the number and size of its drug seizures and number of persons arrested (CHP 2021). The nearest Inland Division office to the project site is located in the community of Mojave, approximately 25 miles northeast of the project site.

Schools/Parks/Other Public Facilities

The project site is located within the Mojave Unified School District (MUSD) which consists of California City High School, California City Middle School, Hacienda Elementary, Robert P. Ulrich Elementary, Mojave High School, Mojave Elementary, Joshua Elementary, and Red Rock School (MUSD n.d.). Other school districts located in the vicinity include Muroc Joint Unified, Southern Kern Unified, Tehachapi Unified, Caliente Union Elementary, South Fork Union Elementary, Kern Union High, and Sierra Sands Unified (Kern County Superintendent of Schools n.d.). The closest school to the project site is the California City School, located approximately 2 miles southeast of the southern portion of the project site.

The Kern County Parks and Recreation Department manages an extensive system of large regional parks designed to serve the entire countywide population, and small neighborhood and community parks intended primarily to meet the recreational needs of nearby residents in unincorporated communities. Kern County Parks & Recreation manages eight regional parks, 40 neighborhood parks, and 25 public buildings, supervises three golf courses and landscapes 76 county buildings (Kern County Parks and Recreation Department 2021).

Other public facilities include library facilities, post office facilities, and courthouses. The Kern County Library has 24 branches and two mobile libraries, which serve 850,000 residents within the County, including incorporated municipalities (Kern County Library 2020). Additionally, there are currently 37 post

offices that serve the County (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 2020-21 Recommended Budget (Kern County 2020b) shows ongoing deficiencies in funding libraries and parks with closings and lack of maintenance for facilities.

4.13.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

2019 California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The 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 (CalFire)

Under Title 14 of the California Code of Regulations, CalFire has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (SRAs). CalFire develops regulations and issues fire-safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately owned wildlands are under CalFire's jurisdiction.

California law requires CalFire to identify areas based on the severity of fire hazard that is expected to prevail there. These areas, or "zones," are based on factors such as fuel, slope, and fire weather. There are three zones, based on increasing fire hazard: medium, high, and very high. CalFire adopted Fire Hazard Severity Zone maps for SRAs in November 2007. Fire hazard is a way to measure the physical fire behavior so that the damage a fire is likely to cause may be reasonably predicted. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and the burning fire brands the fire sends ahead of the flaming front. The project site is not located within an area of high or very high fire hazard nor is the site located in the SRA.

According to the fire hazard severity zone (FHSZ) map published by Cal Fire, the lands proposed to support the PV solar facility are not located within or near an SRA or lands classified as very high fire hazard severity zones (CalFire 2007a). The project site is located within a Local Responsibility Area (LRA) and

designated as LRA Moderate (Cal Fire 2007b). Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior.

Local

Kern County General Plan

Construction and operation of the project would be subject to applicable policies and regulations including those contained in the Kern County General Plan, and the Kern County Code of Building Regulations, all of which include policies, goals, and implementation measures related to public services. The policies, goals, and implementation measures in the Kern County General Plan related to public services that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation 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 6: The County will ensure adequate fire protection to all Kern County residents.
- Policy 7: The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

- Measure A: Continue to administer the Capital Improvement Program (CIP) and coordinate with public utility providers listing the necessary improvements to Kern County's public services and facilities in collaboration with key service providing agencies and the County Administrative Office as a first step toward the preparation of a long-term Public Services Plan for Kern County. This plan addresses the projected demand for public services throughout the County in comparison with projected revenues and identifies long-term financial trends for the major public service providers. The CIP and General Plan can assure compliance with the provisions of Government Code Sections 65401 and 65402 which require review of all capital facility decisions for consistency with this General Plan.
- Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.10 General Provisions

Goal

- Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities

Policies

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Chapter 4. Safety Element

4.6 Wildland and Urban Fire

Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation 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.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

The policies, goals, and implementation measures in the City of California City General Plan for public facilities and services applicable to the project are provided below. The 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 City of California City General Plan are incorporated by reference.

Chapter 6. Safety Element

6.8 Public Safety Goals, Policies, and Implementation Measures

Goals

- Provide and implement effective emergency services that will protect the health, safety, and welfare of residents and workers within the community.
- Protect the health, safety and welfare of residents, businesses, and property from fire danger.

Policies

- Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.
- Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.
- Ensure that new development proposal shall provide street widths and clearance areas are consistent with the City's requirements and, therefore, adequate to accommodate fire protection and emergency response vehicles.
- Continue to enforce the Health, Fire, and Building standards for all new development proposed and rehabilitation of existing structures.
- Continue to monitor water supply for fire-flow to insure adequacy of fire protection services.
- Review all new development proposals for fire safety considerations.

Implementation Measures

S-23: The City shall require that new development proposals demonstrate the availability of fire, police, emergency response, and solid waste disposal services during the environmental review and discretionary approval process.

- S-25: The following measures shall be implemented to ensure adequate fire and police protection services in the incorporated areas of the City:
- a) All new development proposals shall be reviewed by the California City Fire Department and the California City Police Department to ensure the continuation of adequate levels of service.
 - b) If additional Fire Department or Police Department station sites are determined to be required, sites shall be identified and mechanisms to obtain these sites shall be defined. These shall include, but not be limited to, the dedication of land for such purposes or payment of proportional share of fees as a condition of development.
 - c) The City will continue to work with local organizations and the County Sheriff's Department and Fire Department to continue administration of the Mojave Desert Community Response Plan.
- S-27: The City shall review all new development proposals for fire safety considerations. This shall include the economic impacts on the City's ability to provide adequate levels of service. Items such as the incremental increase in staffing and requirements for equipment shall be analyzed and appropriate project level mitigation measures shall be applied. Measures may include specialized fire protection consideration to be incorporated into the design of the project and the contribution of funding for both staffing and equipment needs.

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.

City of California City Fire Code

Title 4, Chapter 1, Article 1 of California City's Municipal Code details the Fire Code of the City. The purpose of the City of California City Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire and explosion arising from storage, use, and handling of dangerous and hazardous materials, substances, and devices; the operation, installation, construction, location, safeguarding, and maintenance of attendant equipment; and the installation and maintenance of adequate means of egress.

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 area. The plan systematically assesses the existing levels of wildland protection services and identifies high-

risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The project site is located within a moderate fire hazard severity zone (KCFD 2009).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, updated 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. The plan evaluates wildland protection services and to identify areas of high-risk and high-value areas that are potentially susceptible to wildfire damage. The plan gives an overview of KCFD battalions and ranks these areas in terms of priority needs as well as identifies the areas of the 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 1 (Tehachapi), which lies within a moderate FHSZ within the Tehachapi fire plan management area (KCFD 2020).

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 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 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).

Kern County Fire Department Hazards Mitigation Plan

The purpose of the KCFD Hazards Mitigation Plan is to reduce or eliminate long-term risk to people and property from natural hazards such as wildfires, severe weather, earthquake, dam failure, landslide, drought and their effects in Kern County. The plan includes specific recommendations for actions that can mitigate future disaster losses, as well as a review of the County's current capabilities to reduce natural hazard 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. Additionally, the plan covers 53 special districts that include school, recreation and park, water, community service and other districts.

California State Legislature Active Solar Energy Exclusion

The State of California has provided reduced property taxes for the solar industry. No other industry has this type of property tax reduction outside a local government providing a specific incentive of a development project.

The California Franchise Tax Board's website outlines that the property tax incentive for the installation of an active solar energy system is in the form of a new construction exclusion (California State Board of

Equalization 2020). It is not an exemption. The installation of a qualifying solar energy system will not result in either an increase or a decrease in the assessment of the existing property. The site states:

“Generally, when something of value is physically added to real property, the addition is assessed at current market value and this value is added to the existing base year value of the real property. When an active solar energy system is installed, it is not assessed, meaning that the existing assessment will not increase.”

The value of the underlying land and some improvements such as operations and maintenance buildings and battery storage are assessed, but the solar panels and majority of equipment are not. Effective June 20, 2014, the sunset date for the active solar energy system new construction exclusion was extended through the 2023-24 fiscal year. The statute is now scheduled to sunset on January 1, 2025. The Kern County Assessor has calculated that the estimated lost annual revenue to the County General Fund from the existing large scale commercial scale solar projects already built is \$19,924,000 that they would normally pay. They currently pay \$1,511,000 (Kern County 2020c).

This revenue is only the funding that would normally go to the General Fund to pay for public services and facilities that maintain quality of life for communities and residents in unincorporated Kern County. The Kern County 2020-2021 Recommended Budget details the General Fund, which funds many County operations, as totaling \$883.1 million, a decrease of \$76.5 million, or 7.97% from the 2019-2020 budget. The 2019-2020 budget was the end of a four-year fiscal emergency with a deficit of over \$40 million (Kern County 2020c).

Kern County Capital Improvement Plan (CIP)

A proposed countywide Capital Improvement Plan was presented to the Kern County Board of Supervisors on October 9, 2007, and adopted in 2008. The CIP represents the best current understanding regarding new public facilities that will be needed to serve projected development in the County through 2030. The scope of services includes parks, libraries, sheriff’s office (public protection and investigation), fire department, animal control, public health, landfill/transfer facilities, and general government. Roads and sewer costs are not part of the CIP. The adopted CIP includes a summary of proposed service levels for the included facilities and a conceptual list of planned projects upon which the CIP was based. Facility standards for sheriff and fire are 0.39 building square feet per capita and 0.76 building square feet per capita, respectively (Kern County 2007). The program includes three phased components:

- Phase One: Develop conceptual CIP for the included facility categories, assessing what additional capacity and conceptual projects are required to provide needed infrastructure for new development through 2030;
- Phase Two: Evaluate existing and potential funding sources, and outline options available as financing mechanisms, including a development fee proposal; and
- Phase Three: Perform a fiscal (operational analysis for use in evaluating the ongoing operating and maintenance impacts of a new development on the County’s general fund.

The adopted CIP includes a summary of proposed service levels for the included facilities and a conceptual list of planned projects, upon which the CIP was based.

Kern County Public Facilities Impact Fees

The changing fiscal landscape in California during the past 30 years has steadily undercut the financial capacity of local governments to fund infrastructure. Three dominant trends stand out:

- The passage of a string of tax limitation measures, starting with Proposition 13 in 1978 and continuing through the passage of Proposition 218 in 1996;
- Declining popular support for bond measures to finance infrastructure for the next generation of residents and businesses; and
- Steep reductions in federal and State assistance.

Faced with these trends, the County has adopted a policy of “growth pays its own way” through use of its Public Facilities Mitigation Program. The primary policy objective of this program is to ensure that new development pays the capital costs associated with growth. As described above, the County has adopted a CIP that identifies the best current understanding of the public facilities that will be needed to accommodate new development anticipated through 2030. The CIP further identified appropriate existing facility demand standards to be used as a basis for estimating future facility needs and level of service. The basic purpose of the CIP is to identify the facilities and infrastructure needed to serve the population through 2030.

Continued growth in the County, and the impacts resulting from that growth, have increased the demands on countywide public services, making it difficult to implement and fund many of the facilities identified in the CIP while maintaining existing public service demand standards.

The purpose of the Public Facilities Mitigation Program is to identify those impacts on public services and determine the monetary mitigation necessary to provide the facilities associated with that growth. Under the Public Facilities Mitigation Program, the project could affect: Sheriff Patrol and Investigation Facilities; and Fire facilities. Fees are required to compensate for impacts to both fire facilities and sheriff patrol and are assigned per 1,000 square feet of industrial development (Willdan 2009).

4.13.4 Impacts and Mitigation Measures

Methodology

The project’s potential impacts to public services include the following: (1) evaluation of existing fire and police services and personnel for the fire and police stations serving the project site; (2) determination of whether the existing fire and police 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 stations to operate beyond service capacity. The determination of the significance of the proposed project on fire protection, emergency medical, and police protection services considers the level of services required by the proposed project and the ability of the KCFD/CCFD and KCSO/CCPD to provide this level of service and still maintain the regular level of service provided throughout the County/city, which in turn could require the construction of new or expansion of existing facilities. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to wildfire, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria to determine if a project could potentially have a significant adverse effect on public services.

A project could have a significant adverse effect on public services if it would:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities the construction of which 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:
 - Fire Protection
 - Police Protection
 - Schools
 - Parks
 - Other Public Facilities

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 needed in the EIR; these issue areas are thus scoped out of this EIR. It was determined that the project would not:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities the construction of which 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:
 - Schools
 - Parks

As detailed in the NOP/IS, the proposed project would have up to 20 permanent on-site staff and there would be a peak workforce of approximately 1,000 workers during the 12- to 18-month construction period. It is anticipated that the construction workforce would commute to the site from various local communities and the number of workers expected to relocate to the surrounding area is not expected to be substantial. If temporary housing should be necessary to accommodate construction workers, it is expected that these accommodations would be available in the nearby hotels in California City, Mojave, Lancaster, or other local communities. Therefore, it is not expected that substantial temporary increases in population would occur that would adversely affect local school populations or park facilities. Operation of the project would require up to 20 permanent employees. As a result, no significant impacts to schools, parks, or other public services are anticipated to occur. No further analysis for these issues areas is warranted in the EIR. However, further discussion on this topic has been provided for clarification purposes, under Impact 4.13-1, below.

Project Impacts

Impact 4.13-1: 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 and Decommissioning

The proposed project would be the development of a PV solar facility and associated infrastructure to generate up to 500 MW of renewable electrical energy on approximately 1,955 acres of privately owned land. As described in Chapter 3, *Project Description*, it is estimated that up to 1,000 workers per day (during peak construction periods) would be required. The presence of construction workers would be temporary and would last approximately 12 to 18 months. It is anticipated that most workers would be sourced from the surrounding communities, such as Mojave, California City, Rosamond, and North Edwards and would commute to the site.

According to the CalFire Fire Hazard Severity Zones Map, the project site is located within a Local Responsibility Area (LRA) and designated as LRA Moderate (CalFire 2007b). 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 CalFire 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 4.17, *Wildfire*, of this EIR.

Fire protection facilities requirements are based on the number of residents and workers in the KCFD and CCFD 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 increases, so do the number of emergency medical calls. There are no residential uses proposed as a 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.

While construction of the proposed project would increase the number of people on the project site, the increase would be temporary and negligible and would not result in a substantial increase in service demand for fire protection services in Kern County and California City. Although service demand per temporary employee is less than service demand per resident, the addition of construction personnel to the area could potentially result in an increased demand for fire protection services and/or emergency medical services.

As such, the proposed project would implement Mitigation Measures MM 4.13-1KC and MM 4.13-1CC, which require the project proponent to prepare and implement a fire safety plan that contains notification procedures and emergency fire precautions consistent with the 2019 California Fire Code, Kern County Fire Code, and California City Fire Code. The 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 that temporary employees are equipped to handle fire threats. With implementation of this plan, impacts to fire protection services during project construction would be less than significant.

Operation

Once constructed, the proposed project would require an operational staff of up to 20 full-time employees. These employees could also be shared from the operations and maintenance building (O&M), substation, and/or transmission facilities from nearby projects. Employees would be responsible for maintenance of the facilities, including cleaning of PV panels, monitoring electricity generation, providing site security, and replacing or repairing inverters, wiring, and PV modules. Project facilities would be designed in accordance with the 2019 California Fire Code, Kern County Fire Code, and California City Fire Code such that fire hazards are reduced and/or avoided.

The project includes battery energy storage facilities that would be installed on pad or post-mounted on foundations and contained within an enclosure to minimize the potential for sparks or ignition to occur. All such enclosures would have a fire rating in conformance with U.S. national safety standards, as well as County and California Building Code standards. The energy storage facilities will include specialized fire suppression systems installed for the battery rooms to minimize fire risk. In accordance with Mitigation Measures MM 4.13-1KC and MM 4.13-1CC, a fire safety plan will be prepared to ensure the energy storage facilities are constructed and operated in accordance with County and California Building Code standards that will minimize potential impacts to public services and associated fire hazards.

The project operator would also be required to implement Mitigation Measures MM 4.13-2KC and MM 4.13-2CC, to pay a Kern County and California City Cumulative Impact Charge (CIC) to provide funding for the County and City budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the County and City would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measures MM 4.13-3KC and MM 4.13-3CC. Through implementation of Mitigation Measure MM 4.13-4KC and MM 4.13-4CC, the project proponent/operator shall work with the County and City to determine how the use of sales and use taxes from construction of the project can be maximized. With implementation of Mitigation Measures MM 4.13-1KC through MM 4.13-4KC, and MM 4.13-1CC through MM 4.13-4CC, any potential operational impacts on fire protection

services would be substantially reduced. Therefore, the project would not result in the need for new or physically altered KCFD facilities and impacts would be less than significant.

Law Enforcement/Police Protection

Construction and Decommissioning

Similar to the discussion for fire protection services, the proposed project could potentially increase service needs from the KCSO and CCPD during the construction phase. The project site is currently undeveloped and located in a relatively remote location in a rural community and is thus unlikely to attract attention that would make project facilities susceptible to crime. Commutes of construction workers could potentially increase traffic, and could thus adversely affect KCSO and CCPD response times and/or CHP's ability to patrol the highways. The commutes of construction workers would temporarily increase traffic volumes along State Route (SR) 14 and SR 58 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, therefore, would not have a significant adverse effect on KCSO and CCPD response times or CHP's ability to patrol the highways. Chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access to restrict public access during construction. Furthermore, project personnel commuting to the project site via these highways would be required to adhere to all traffic laws.

As such, an increase in the demand for KCSO or CCPD services is not expected. New or physically altered KCSO and CCPD facilities would not be required to accommodate the proposed project and impacts to the CHP patrol are not anticipated. Impacts would be less than significant.

Operation

Once the proposed project is constructed, regular activities 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 project would require an operational staff of up to 20 full-time employees. These employees could also be shared from the O&M, substation(s), and/or transmission facilities operating at nearby projects. Given the limited number of permanent employees, commutes by maintenance employees would be minimal and would not result in an adverse impact on KCSO or CCPD response times or the CHP's ability to patrol the local highways.

Project operation could attract vandals or present other security risks; however, this would be addressed through a number of design and operational features. For security purposes, the perimeter of the project areas would be enclosed within a chain-link fence with barbed wire measuring up to 8 feet in height. An intrusion alarm system composed of sensor cables integrated into the perimeter fence, intrusion detection cabinets placed approximately every 1,500 feet along the perimeter fence, and an intrusions control unit, located either in the substation control room or at the O&M building, or similar technology, would be

installed. Additionally, it is anticipated that the project design would incorporate additional security measures including, but not limited to, barbed wire, low voltage fencing with warning reflective signage, controlled access points, security alarms, security camera systems, and security guard vehicle patrols to deter trespassing and/or unauthorized activities that could interfere with operation of the proposed project. Controlled access gates would be maintained at the main entrances to the project site. Project access would be provided to off-site emergency response teams that respond in the event of an “after hours” emergency. Enclosure gates would be manually operated with a key provided in an identified key box location. With implementation of these security features, potential impacts resulting from criminal activity (i.e., vandalism or trespassing) that may adversely affect the provision of police protection services or that would require the construction of new facilities would be reduced to less than significant.

The project would implement Mitigation Measures MM 4.13-2KC and MM 4.13-2CC, requiring the project proponent provide a CIC fee to provide funding for the County and City budgets for services that have experienced reduced funding due to the State of California Active Solar Energy Exclusion provision on property taxes that the County and City would otherwise receive for services and facilities and assuring the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measures MM 4.13-3KC and MM 4.13-3CC. Through implementation of Mitigation Measures MM 4.13-4KC and MM 4.13-4CC, the project proponent/operator shall work with the County and the City to determine how the use of sales and use taxes from construction of the project can be maximized. As a result, impacts would be less than significant.

Schools/Parks/Other Public Facilities

Construction and Decommissioning

As discussed in the IS/NOP, the proposed project would require an average of approximately 1,000 workers during the 12- to 18-month construction period. The presence of construction workers at the project site would be temporary. These construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site.

Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, through the implementation of Mitigation Measures MM 4.13-5KC and MM 4.13-5CC, which encourage all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. Therefore, project construction workers would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction would be less than significant.

Operation

Operation of the project would require approximately 20 full-time workers onsite. Employees would intermittently visit the project site for routine inspection, maintenance, and repair of solar arrays and accessory components. 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 at local schools, parks, or public facilities. Therefore, staff required during operation would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction and operation would be less than significant.

Additionally, the developer fee for the Mojave Unified School District is currently assessed at \$0.61 per square foot of commercial or industrial development space (MUSD 2018). The project would pay its fair share based on the developer fee rate applicable at the time when such payments are determined, as well as any adjustments as agreed upon by the school district and the developer.

Unlike other businesses in California, large scale solar has an exclusion from property taxes on their equipment. This property tax exclusion results in the project not providing the revenue needed to provide services and facilities for both the project and the communities that prevent decline of the physical neighborhoods in unincorporated Kern County. This is a direct impact from the project structure and the land if built with another type of land use would produce property tax revenue to provide necessary services and facilities and prevent physical decline of homes and businesses due to vacancy and inability for response for all services, including code enforcement to law enforcement, fire, roads and health and safety issues such as elderly care and child protection services. The cumulative impacts of this active solar tax exclusion over the life of the over 36,000 acres of projects has resulted in a loss to the General Fund over the last 10 years of over \$103 million and deepened the ongoing fiscal emergency of the county. Public policies in the Kern County General Plan require development to address economic deficiencies in public services and facilities costs. Further the cumulative impacts of all the projects in addition to this project on various resources including aesthetics, air and biological resources have contributed to changing the visual and community character of the unincorporated communities and caused decline due to using land for a use that does not provide normal property tax revenue.

Mitigation Measures MM 4.13-2KC and MM 4.13-2CC provide a CIC calculated on net acreage that excludes assessable structures and permanent improvements (Operation and Maintenance Building and Energy Storage) and legally unbuildable land (recorded easements). The charge factor was calculated based on the fair share under the Government Code that the project would have paid if the Tax Exclusion was not present. The amount the project should pay is calculated as \$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 as well as the California City General fund. As 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 the mitigation that requires a one-time charge for the General fund contribution. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that

entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measures MM 4.13-3KC and MM 4.13-3CC. Through implementation of Mitigation Measures MM 4.13-4KC and MM 4.13-4CC, the project proponent/operator shall work with the County and City to determine how the use of sales and use taxes from construction of the project can be maximized. With this CIC and assessed taxes if the project is sold, the project impacts on public services and facilities and contribution to decline of communities is less than significant.

Mitigation Measures

Kern County

MM 4.13-1KC: Prior to the issuance of grading or building permits, the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning.

The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved fire safety plan shall be submitted to the Kern County Planning and Natural Resources Department. The fire safety plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

- a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
- b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) mufflers in good condition.
- c. Fire rules shall be posted on the project bulletin board at the contractor's field office and in 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 restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.
- g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.

MM 4.13-2KC: The following Cumulative Impact Charge shall be implemented as payment on approved Conditional Use Permit acreage.

- a. Submittal of Building Permit and Phasing
 1. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification.
 2. The map for either the total project or a phase shall calculate the Cumulative Impact Charge 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
 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 Cumulative Impact Charge
 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 County Administrative Office Fiscal Division and labeled Cumulative Impact Charge 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 Cumulative Impact Charge.

MM 4.13-3KC: Written verification of ownership of the proposed project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company that pays assessed taxes that total less than \$3,000 per megawatt per year, then a Supplemental Cumulative Impact Charge (SCIC) shall be paid for the difference annually up to \$3,000 per megawatt. The SCIC payments shall be made annually directly to the County

Administrative Office Fiscal Division (CAO) and labeled “Supplemental Cumulative Impact Charge (SCIC)” with the project name and phase number.

MM 4.13-4KC: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.

MM 4.13-5KC: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

City of California City

MM 4.13-1CC: 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 California City Fire Department for review and approval. A copy of the approved fire safety plan shall be submitted to the California City Community Development Department prior to the issuance of any building permit or grading permits. The fire safety plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

- a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
- b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) mufflers in good condition.
- c. Fire rules shall be posted on the project bulletin board at the contractor’s field office and in 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 restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.
- g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.

MM 4.13-2CC: The following Cumulative Impact Charge shall be implemented as payment on approved Conditional Use Permit acreage.

- a. Submittal of Building Permit and Phasing
 - 1. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification.
 - 2. The map for either the total project or a phase shall calculate the Cumulative Impact Charge 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
 - 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 Cumulative Impact Charge
 - 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 California City Finance Department 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 Cumulative Impact Charge.

MM 4.13-3CC: Written verification of ownership of the project shall be submitted to the California City Community Development 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 California City Finance Department and labeled “Supplemental Cumulative Impact Charge (SCIC)” with the project name and phase number.

MM 4.13-4CC: The project proponent/operator shall work with the City to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the incorporated territory of California City 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 California City 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 California City. The project proponent/operator shall allow the City to use this sales tax information publicly for reporting purposes.

MM 4.13-5CC: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.13-1KC through MM 4.13-5KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.13-1CC through MM 4.13-5CC, 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 includes the service areas for each of the fire and police entities serving the project site. For both the KCFD/CCFD and the KCSO/CCPD, service areas include unincorporated areas of Kern County and California City. Of the 14 cumulative projects identified in Table 3-3, *Cumulative Projects List*, of Chapter 3, *Project Description*, there are approximately 14 solar and non-solar projects proposed or approved throughout the Fremont Valley in Kern County.

As discussed above, the project would generate a relatively small number of full-time permanent jobs on site that would not result in a substantial population increase and would thus not significantly impact public services and facilities that are based on a service population. Combined with the other pending development projects in the Fremont Valley area however, there is a potential for significant cumulative impacts on various public services and facilities to occur over the long-term. As discussed above, police and fire service impacts related to the proposed project would be less than significant with the implementation of mitigation measures. Mitigation Measures MM 4.13-1KC and MM 4.13-1CC require implementation of a fire safety plan during project construction, operation, and decommissioning activities that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services on-site. Mitigation Measures MM 4.13-2KC and MM 4.13-2CC would require the project proponent to pay applicable fees and taxes to reduce significant impacts all public services in Kern County and the City of California City, including fire and police protection services, resulting from the project.

There are numerous other proposed projects, including other solar power projects, within the affected service areas of the local fire and sheriff stations that would add to the overall range of developed land uses that may require some form of response from these two service entities over their operating lives. Similar to the proposed project, all other past, present, and reasonably foreseeable future projects located within these KCFD/CCFD and KCSO service areas would be required to comply with the 2019 California Fire Code, Kern County Fire Code, and California City Fire Code, as well as to make payment of pertinent taxes and development impact fees. As a result, the proposed project, in combination with the cumulative projects considered, is not anticipated to overburden the KCFD/CCFD or KCSO resources such that they are unable to maintain acceptable response times or service levels. Significant cumulative impacts, therefore, are not anticipated. Over time, however, either agency may determine that needs have changed and may elect to build new facilities or expand existing facilities. Environmental review of such projects would occur at the time they are proposed and any project-specific impacts cannot therefore be identified until such a proposal is made.

Additionally, implementation of Mitigation Measures MM 4.13-2KC through MM 4.13-5KC and MM 4.13-2CC through MM 4.13-5CC would also prevent the decline of services in unincorporated communities that result in physical impacts on neighborhoods. Such cumulative impacts include increase in vandalism

on public spaces such as parks, lack of road and park facilities maintenance, abandoned vehicles and buildings, trash abandonment on private property, and lack of funding for code enforcement of regulations for public health and safety, lack of services for homelessness prevention programs, as well as lack of services and facilities for elder, adolescent and child health and safety services and general mental health facilities. With payment of the required mitigation charges, impacts from the project's contribution to a cumulative decline of services would be appropriately mitigated. Therefore, the project would not create a cumulatively considerable impact on public services even from the State of California Active Solar Energy Exclusion which creates a lack of fair share funding by the project for public services.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.13-1KC through MM 4.13-5KC.

City of California City

Implement Mitigation Measures MM 4.13-1CC through MM 4.13-5CC.

Level of Significance after Mitigation

Kern County

With the implementation of Mitigation Measures MM 4.13-1KC through MM 4.13-5KC, cumulative impacts would be less than significant.

City of California City

With the implementation of Mitigation Measures MM 4.13-1CC through MM 4.13-5CC, cumulative impacts would be less than significant.

4.14.1 Introduction

This section of the EIR describes the affected environment and regulatory setting related to transportation for the proposed project. It also describes the impacts associated with transportation that would result from project implementation and includes mitigation measures that would reduce these impacts, where applicable.

Information in this section is based primarily on the *Kudu Solar Traffic Impact Analysis* (Kudu Solar TIA) prepared by Stantec (Stantec 2020b), located in Appendix K-1, and the *Kudu Solar Project Construction – SR 14 at Phillips Road Intersection Evaluation Memorandum* prepared by Stantec (Stantec 2021c), located in Appendix K-2, of this EIR.

4.14.2 Environmental Setting

The proposed project is located in portions of unincorporated Kern County and California City, north of the California City Municipal Airport. State Route (SR) 14 provides regional access to the project site.

Existing Roadway System and Freight Rail Lines

SR 14 is a four-lane divided highway adjacent to and west of the project site. For regional travel, residents of California City and other nearby communities rely primarily on SR 14, which carries traffic south to Lancaster and other major routes. SR 14 connects to SR 58 and SR 138 before reaching Interstate 5 (I-5) near Santa Clarita; I-5 provides access to the City of Los Angeles.

SR 58 is a four-lane divided highway located approximately 8 miles south of the project site. SR 58 provides regional access to Bakersfield to the west and communities such as Barstow to the east.

The majority of the project site is bisected to the east-west by Washburn Boulevard (which is also the Kern County/California City limit line) and to the north-south by Neuralia Road. Access to the site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland Solar project site.

The Union Pacific Railroad traverses the western portion of the project site; refer to Figure 3-2, *Project Site Boundaries*, and Figure 3-3, *Aerial Photograph*. The crossing occurs approximately 0.4 miles west of the Gantt Road intersection and is controlled by a yield sign.

Transit, Bicycle, and Pedestrian Facilities

Kern County

Public transportation in Kern County is provided by Kern Transit, which offers 17 fixed bus routes throughout the County and a dial-a-ride general public transportation service for residents in Frazier Park,

Kern River Valley, Lamont, Mojave, Rosamond, and Tehachapi. The transit system offers intercity bus service along with local transit service. In the vicinity of the PV solar field, Kern Transit operates several bus routes. Route 100 (Bakersfield-Lancaster) provides service between Bakersfield and Lancaster. The route follows Route 58 easterly from Bakersfield, then south along SR 14 to Lancaster with stops in Tehachapi and Rosamond. Route 240 (Boron-Mojave) follows SR 58 easterly from Mojave to Boron. Route 230 extends to the north from Mojave along SR 14, east along California City Boulevard, north along Neuralia Road, north along SR 14, and east along SR 178 (W. Inyokern Road) to Ridgecrest. Stops are provided in California City and Esta along the route. Additionally, Route 250 (California City-Lancaster) provides service between California City and Lancaster. The route extends north-northeast from Lancaster along SR 14, then east along California City Boulevard to California City. Stops are provided in Rosamond and Mojave along the route (Kern Transit 2021).

Due to the rural and mostly undeveloped location of the proposed PV solar fields, there are no dedicated pedestrian or bicycle facilities in the immediate vicinity.

Airport Facilities

Public and private airports located within a 20-mile radius of the project site are described below.

California City Municipal Airport is a public airfield located immediately south of the southern portion of the project site. The southern portion of the proposed solar facility would be located within the Airport Influence Areas of the California City Municipal Airport. The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. Section 4.2 of the ALUCP addresses the California City Municipal Airport and discusses land uses and procedures relative to its aviation and other compatibility criteria. In addition, Section 4.17.3 of the ALUCP requires that the Edwards AFB be notified of development that falls within identified notification categories. Figure 3-6, *ALUCP in Relation to the Project Site*, shows the project site and its vicinity, with respect to the ALUCP zones.

This airport has a 6,000-foot asphalt runway and primarily serves general aviation aircraft, with some military flights also using the facility. In operation since 1963, the airport serves an average of 68 flight operations per week.

Edwards Air Force Base is a military base and airstrip located approximately 13 miles southeast of the southern portion of the project site. The base is owned and operated by the U.S. Air Force (not open to public use) and includes three runways that range in length from 8,000 feet to 12,000 feet and that are paved with concrete or asphalt. The base covers more than 301,000 acres, and also includes additional landing areas on the hard packed surface of the Rogers Dry Lake and Rosamond Dry Lake. The base also supports the U.S. space shuttle program as a backup landing site.

Mojave Air and Space Port is a public airfield operated by the East Kern Airport District (EKAD) and located approximately 10 miles southwest of the project site. This airport has three asphalt runways (with lengths of 3,946, 7,049, and 12,503 feet) and primarily serves general aviation aircraft, with some commercial, air taxi, and military flights also using the facility. In operation since 1940, the airport serves an average of 48 flight operations per day. In 2004, this facility was the first to be certified as a spaceport by the FAA. The project site is located within the Airport Influence Area of the Mojave Air and Space Port

and would therefore be subject to review by the EKAD to ensure conformance with any designated restrictions (e.g., building height, glare, electrical interference).

Study Segments

A TIA was prepared for the proposed project to determine the amount of traffic generated by the project during construction and operation and to identify potential traffic-related significant impacts on the affected portions of the circulation system (Stantec 2020b; see Appendix K-1). The TIA evaluated the following roadway segments:

- SR 14 at SR 58 south of project site;
- SR 14 near project site;
- SR 14 at SR 178 north of project site;
- SR 58 at Randsburg Cut-Off Road; and
- SR 58 at Boron Avenue.

Potential project-generated construction effects on the Phillips Road/SR 14 intersection were further analyzed in the *SR 14 at Phillips Road Intersection Evaluation* (Stantec 2021c; see Appendix K-2).

Level of Service

Level of service (LOS) is a qualitative index of the performance of an element of a transportation system. LOS is a rating scale from A to F, with A indicating no congestion and F indicating severe congestion and delays. The Highway Capacity Manual (HCM), a standard reference published by the Transportation Research Board (2016), contains specific criteria and methods for assessing LOS. The generalized daily service volume methodology was used to calculate the allowable daily service volume used in determining LOS. The LOS for multilane highways is calculated based on traffic density and the speed traveled. The LOS for two-lane highways is calculated based on vehicle mobility, which is estimated based upon travel speed and the ability of vehicles to pass slow-moving vehicles in the traffic stream.

Existing Traffic Conditions

Existing traffic conditions for the five roadway segments were evaluated based on LOS criteria and the HCM 6 generalized daily service volume methodology for estimating LOS. The roadway capacities were estimated and compared to observed traffic volumes.

The maximum daily traffic volumes that would allow the highway segments to maintain an acceptable LOS are shown in Table 4.14-1, *Existing LOS of Roadway Segments*. As shown, all roadway segments currently operate at acceptable LOS C or better, except for roadway segment #3 - SR 14 MP 57.77 – south of Freeman junction with SR 178 (two-lane), which currently operates at LOS D.

Table 4.14-1. Existing LOS of Roadway Segments

#	Roadway Segment	Facility Type	Allowable Daily Service Volume (LOS C)	ADT	LOS
1	SR 14 MP 16.07 – South junction with SR 58	Multilane Highway	39,200	10,700	A
2	SR 14 MP 21.29 – North of Randsburg Cut-off Road to California (near project site)	Multilane Highway	22,700	5,900	A
3	SR 14 MP 57.77 – South of Freeman junction with SR 178 (two-lane)	Two-lane Highway	<5,100	6,500	D
4	SR 58 MP 107.47 – Randsburg Cut-off Road	Multilane Highway	42,700	19,600	B
5	SR 58 MP 142.88 – Boron Avenue	Multilane Highway	41,700	15,350	A
6	SR 14 – Phillips Road	Multilane Highway	22,700	7,700	C

Source: Stantec 2020b (see Appendix K-1); Stantec 2021c (see Appendix K-2).

Notes:
 ADT = average daily traffic
 LOS = level of service
 MP = mile post
 SR = State Route

The allowable daily service volume was calculated for each location based on the unique peaking factors obtained from Caltrans.

4.14.3 Regulatory Setting

Federal

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 49 Code of Federal Regulations Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
 - Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
 - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;

- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;
- When requested by the FAA; and
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to 49 United States Code Section 46301(a).

State

Senate Bill 375

Senate Bill (SB) 375 (codified in the Government Code and the Public Resources Code) took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the greenhouse gas (GHG) reduction goals established by Assembly Bill (AB) 32. SB 375 requires metropolitan planning organizations (MPO) to incorporate a sustainable communities strategy in their regional transportation plans to achieve GHG emissions reduction targets by reducing vehicle miles traveled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities.

SB 375 required the California Air Resources Board (CARB) to set regional targets for reducing GHG from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each region in California governed by an MPO. Kern Council of Governments (Kern COG) is the MPO for the Kern region as designated by the federal government, and the regional transportation planning agency (RTPA) as designated by the State of California.

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 (i.e., transit-oriented development, or TOD). Most notably with regard to transportation and traffic assessments, SB 743 changes the way that transportation impacts are analyzed under CEQA (see Public Resources Code Section 21099). SB 743 required the Governor's Office of Planning and Research (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 GHG 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 (Guidelines) provided recommendations for updating the state's CEQA Guidelines in response to SB 743 and contained recommendations for a VMT analysis methodology in an accompanying *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory).

The Guidelines, 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. Public Resources Code Section 21099 and CEQA Guidelines Section 15064.3 reflect this change. Under 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.

California Department of Transportation (Caltrans)

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Eastern Kern County (including the project site and surrounding area) is under the jurisdiction of Caltrans District 9. The Caltrans regulations below apply to potential transportation impacts of the project:

California Vehicle Code, 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.

Regional

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by Kern Council of Governments (COG) and adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS), which is required by California's Sustainable Communities and Climate Protection Act, of SB 375. CARB set a goal for Kern County to reduce 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. Kern COG engaged in the RHNA process concurrently with the development of the 2018 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the state's housing goals are met.

The intent of the SCS is to achieve the state's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape the community's future.

The RTP/SCS financial plan identifies available funding 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. Funding

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.

Local

Kern County

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan Circulation Element for transportation that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. The design LOS for Kern County is LOS C. The minimum LOS for conformance with the Kern County General Plan is LOS D.

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 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 Highways

2.3.3 Highway Plan

Goal

- Goal 5: Maintain a minimum LOS D.

Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section 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; County Standard 110 feet;
- Collector [Secondary Highway] - Minimum 90-foot right-of-way; County Standard 90 feet;
- Commercial-Industrial Street - Minimum 60-foot right-of-way; County Standard 60 feet; and
- Local Street [Select Local Road] - Minimum 60-foot right-of-way; County Standard 60 feet.

Implementation Measure

Measure A: The Kern County Planning and Community Development 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 Kern County Planning and Community Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

- Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. However, development proposed as part of a Community Plan or Specific Plan which utilizes Smart Growth Policies that encourage efficient multi-modal movements (See Section 1.10.8) is allowed the flexibility to assess traffic and safety impacts through other means than Level of Service (LOS). Utilization of the 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 off-site transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.
- Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to 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 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 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 that contains the CMP. The CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP is linked to air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures 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.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas (Kern County 2009).

City of California City General Plan

Chapter 3. Circulation Element

3.7 Highway and Street System Goals, Policies, and Implementation Measures

Goals

- Goal 1: Develop and maintain an effective multi-modal transportation and circulation system.
- Goal 2: Minimize the adverse impact of streets and highways on adjacent land uses and on the environment of the General Plan planning area.

Policies

- Policy 1: Plan and provide a street and highway system to move people and goods in an orderly, safe, and an efficient manner. Level of Service classification C or better shall be maintained for arterial and collector streets.

Implementation Measure

- T-7: The City shall require the preparation of a Traffic Impact Analysis (TIA) for proposed private development projects consistent with the City's Municipal Code, Chapter 2. Traffic. The TIA will, at a minimum be required to address off-site traffic circulation, on-site traffic circulation, and alternative transportation including transit and bicycles. The TIA shall identify the impacts of the proposed development project and define mitigation measures to address effects determined to be significant. The TIA shall be used in the preparation of the appropriate environmental documentation consistent with the requirements of the California Environmental Quality Act (CEQA).

T-10: As a part of the approval process for a private development proposal, the project applicant/developer shall be required to provide street improvements that may include, but not be limited to landscaping, lighting, and signage. Where necessary, the City will work with the appropriate parties to establish a service district to maintain landscaping and lighting adjacent to the public right-of-way.

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 CMP. The Kern COG was designated as the Congestion Management Agency (CMA).

The CMP provides a systematic process for managing congestion and information regarding (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs. The purpose of the CMP is to ensure that a balanced transportation system is developed that relates population growth, traffic growth and land use decisions to transportation system LOS performance standards and air quality improvement. The program attempts link land use, air quality, transportation, advanced transportation technologies as integral and complementary parts of this region's plans and programs.

The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated state highways.

Kern County Airport Land Use Compatibility Plan (ALUCP)

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. As noted above in Section 4.14.2, *Environmental Setting*, the project site is located within 20 miles of the California City Municipal Airport, Edwards Air Force Base, and the Mojave Air and Space Port.

The project site is located immediately north of the California City Municipal Airport. As shown in Figure 3-6, *ALUCP in Relation to the Project Site*, the southernmost portion of the project site is located in “Compatibility Zone B1 – Approach/Departure Zone and Adjacent to Runway” (APN No. 302-020-08) and “Compatibility Zone C – Common Traffic Pattern” (APN No. 302-020-08, -09, -11, -14, -15, -16, -17, -18, and 302-470-14). The project site is also located in the adopted Military Aviation boundaries for the ALUCP for the R-2508 Airspace Complex for Edwards Air Force Base and China Lake Naval Weapons Station. Further, the site is located within the Airport Influence Area of the Mohave Air and Space Port and would therefore be subject to review by the EKAD to ensure conformance with any designated restrictions (e.g., building height, glare, electrical interference).

4.14.4 Impacts and Mitigation Measures

Methodology

The Kudu Solar TIA (Stantec 2020b) was prepared for the proposed project and is provided in Appendix K-1 of this EIR. Traffic impacts involving vehicle delay due to project implementation were evaluated for the site by establishing trip generation rates for both 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.

Level of Service

Kern County uses a threshold of LOS D for the minimum acceptable operation of its transportation facilities. Facilities under the jurisdiction of Caltrans include freeway segments, ramps, ramp terminals, and arterials. Although Caltrans has not designated a LOS standard, Caltrans's *Guide for the Preparation of Traffic Impact Studies* (December 2002) indicates attempts to maintain the LOS of a state highway facility between the LOS C/D threshold (Stantec 2020b).

For the purpose of analyzing the proposed project, a LOS threshold of C was used to determine the significance of project impacts on traffic and transportation. The project would be considered to have a significant impact on traffic and transportation if it would cause the operation of a transportation facility to worsen from LOS C or better to LOS D or worse (Stantec 2020b).

Vehicle Miles Traveled

The OPR Technical Advisory recommends that absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a SCS or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact. For the purpose of analyzing the proposed project, the project would be considered to have a less than significant impact on VMT if the project is consistent with the threshold provided by the OPR Technical Advisory (Stantec 2020b).

Construction Trip Generation

The proposed project would cover approximately 1,955 acres. Construction of the project is expected to be completed in the following five phases:

- Phase 1: Site Preparation and Grading
- Phase 2: Tracker Foundations (Piles)
- Phase 3: Underground Cabling
- Phase 4: Mechanical Installation
- Phase 5: Electrical/Instrumentation Work

The analysis of construction trip generation was prepared based on the average daily volume of construction traffic. The time period with the highest construction trip generation was found to be during the overlap of Phases 1 and 2. As shown in Table 4.14-2, *Overall ADT by Phase*, the project is expected to generate a total passenger car equivalent volume of approximately 1,959 average daily trips (ADT), which includes 1,710 passenger car trips and 115 heavy vehicle trips (or 249 trips when converted to passenger car equivalent; see Impact 4.14-1).

Table 4.14-2. Overall ADT by Phase

Phase	Description	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov
1	Site Prep & Grading	714	714	714											
2	Tracker Foundations			1,245	1,245	1,245	1,245	1,245							
3	Underground Cabling						56	56	56	56					
4	Mechanical Installation								56	56	56	56	56	56	
5	Electrical Installation									318	318	318	318	318	318
Total		714	714	1,959	1,245	1,245	1,301	1,301	112	430	374	374	374	374	318

Source: Stantec 2020b (see Appendix K-1).

Operations Trip Generation

Once constructed, the solar facility would have up to 20 full-time employees and the majority of the staff would work during the day shift. To be conservative, assuming all employees work during the day shift, approximately 50 trips per day would be generated by operation of the facility based on an average trip rate of 2.5 average daily trips per employee.

Construction Truck Routing

The routing of trucks during project construction would be on SR 14 and SR 58 depending on the type of construction activity. Upon exiting SR 14, construction traffic would access the project site from Phillips Road, Gantt Road, or Neuralia Road, or through the Eland Solar project site.

Vehicle Miles Traveled

The OPR Technical Advisory recommends that absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a SCS or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact.

Level of Service Methodology

Specific service measures are used to determine LOS. For freeway segments, LOS is based on density while on two-lane highways, the LOS is based on the percent time-spent-following and speed. As noted previously, the Highway Capacity Manual (HCM), 6th Edition, published by the Transportation Research Board, includes six levels of service for roadways or intersections ranging from LOS A (best operating conditions characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability)

to LOS F (worst operating conditions characterized by forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions) (Transportation Research Board 2016).

For planning-level analyses, the HCM provides generalized service volume tables to estimate the LOS based on traffic volume on a roadway. The roadway capacity can be compared to the traffic volume to determine if a segment of roadway, highway, or freeway is operating at satisfactory LOS, as defined in the Thresholds of Significance below.

LOS at signalized intersections is defined in terms of the weighted average control delay for the intersection as a whole. Control delay is a measure of the increase in travel time that is experienced due to traffic signal control and is expressed in terms of average control delay per vehicle (in seconds). Control delay is determined based on the intersection geometry and volume, signal cycle length, phasing, and coordination along the arterial corridor.

Unsignalized intersections are categorized as either all-way stop control (AWSC) or two-way stop control (TWSC). LOS at AWSC intersections is determined by the weighted average control delay of the overall intersection. The HCM TWSC intersection methodology calculates LOS based on the delay experienced by drivers on the minor (stop-controlled) approaches to the intersection. For TWSC intersections, LOS is determined for each minor-street movement, as well as the major-street left turns.

Kern County uses a threshold of LOS D for the minimum acceptable operation of its transportation facilities. Facilities under the jurisdiction of Caltrans include freeway segments, ramps, ramp terminals, and arterials. Although Caltrans has not designated a LOS standard, Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) indicates attempts to maintain the LOS of a state highway facility between the LOS "C/D" threshold (Caltrans 2002).

For the purpose of this analysis, a LOS threshold of C was used to determine the significance of project impacts on traffic and transportation. The project would be considered to have a significant impact on traffic and transportation if it would cause the operation of a transportation facility to worsen from LOS C or better to LOS D or worse.

Thresholds of Significance

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

A project could have a significant adverse effect on transportation if it would:

- a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
 1. Kern County General Plan LOS D
- b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- d) Result in inadequate emergency access.

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 certain environmental issue areas, including the following, and that no further analysis would be required in the EIR:

- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

However, this threshold was reevaluated herein as part of this EIR to ensure that the potential for the project to result in impacts relative to hazards or incompatible uses is addressed.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to transportation, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.14-1: The project would conflict with a program, plan, ordinance, or policy establishing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Solar Facility

Construction

To evaluate project consistency with the Kern County General Plan Circulation Element and California City General Plan Circulation Element, the Kudu Solar TIA was prepared by Stantec (Stantec 2020b); refer to Appendix K-1 for additional discussion.

As stated above, for regional travel, residents of California City and other nearby communities generally rely primarily on SR 14, which carries traffic south to Lancaster and other major routes. SR 58 also provides regional access to the area, trending east-west. Local access to the project site would be from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through the Eland Solar project site.

As shown in Table 4.14-1, *Existing LOS of Roadway Segments*, all of the roadway segments evaluated currently operate at acceptable LOS C or better, except for roadway segment #3 - SR 14 MP 57.77 - south of Freeman junction with SR 178 (two-lane). This roadway segment currently operates at LOS D.

The project is expected to generate a total passenger car equivalent (PCE) volume of approximately 1,959 ADT, which includes 1,710 passenger car trips and 249 heavy vehicle PCE trips (115 heavy vehicle trips are converted to PCE). Heavy vehicles consist of light-, medium-, and heavy-duty trucks, including heavy-duty diesel construction trucks. Heavy vehicles are approximated as more than one passenger car due to

their physical and mechanical characteristics, such as slower acceleration and stopping. A factor of 2.16 was used to convert heavy vehicles to PCE. Approximately 980 trips would be inbound to the Project site and approximately 980 trips would be outbound from the project site each day (Stantec 2021c).

Under the existing plus project construction scenario, all multilane highway study segments potentially affected by the project would operate at an acceptable LOS C or better. As such, the project would not degrade the LOS to an unacceptable level, and a significant impact would not occur. The LOS for the two-lane highway segment (SR 14 near MP 57.77) is expected to continue to operate at LOS D under the worst-case construction traffic scenario as the project would not be expected to add more than 3,000 vehicles, which is the additional volume that would be required to cause LOS E (Stantec 2020b). As project-generated construction traffic would not be expected to worsen operations on this highway segment to an unacceptable LOS E, impacts are considered to be less than significant. Refer to Table 4.14-3, *Existing Plus Construction Traffic LOS of Roadway Segments*. Refer also to Appendix K-1 for a more detailed discussion.

Table 4.14-3. Existing Plus Construction Traffic LOS of Roadway Segments

#	Roadway Segment	Facility Type	Allowable Daily Service Volume (LOS C)	Allowable Daily Service Volume (LOS D)	Existing ADT	Project ADT	Existing Plus Project ADT	LOS
1	SR 14 MP 16.07 – South junction with SR 58	Multilane Highway	39,200	--	10,700	1,959	12,659	A
2	SR 14 MP 21.29 – North of Randsburg Cut-off Road to California (near project site)	Multilane Highway	22,700	--	5,900	1,959	7,859	A
3	SR 14 MP 57.77 – South of Freeman junction with SR 178 (two-lane)	Two-lane Highway	<5,100	<8,200	6,500	980	7,840	D
4	SR 58 MP 107.47 – Randsburg Cut-off Road	Multilane Highway	42,700	--	19,600	1,959	21,559	B
5	SR 58 MP 142.88 – Boron Avenue	Multilane Highway	41,700	--	15,350	1,959	17,309	A
6	SR 14 MP 27 - Phillips Road	Multilane Highway	22,700	--	7,700	9,700		C

Source: Stantec 2020b (see Appendix K-1); Stantec 2021c (see Appendix K-2).

Notes:

ADT = average daily traffic

LOS = level of service

MP = mile post

SR = State Route

The allowable daily service volume was calculated for each location based on the unique peaking factors obtained from Caltrans.

As stated, project-generated construction traffic would utilize the SR 14 at Phillips Road at-grade intersection to access the primary construction areas east of SR 14. Construction traffic access to the main construction areas east of SR 14 would primarily occur at the SR 14/Phillips Road intersection, which is located at approximately SR 14 post-mile 27.

At the SR 14/Phillips Road intersection, under existing conditions, traffic volumes are 7,700 ADT (Stantec 2021c). Assuming a worst-case scenario of 100 percent of the construction-generated traffic on the SR 14/Phillips Road intersection, the daily traffic volume with project construction traffic is estimated to be 9,700 ADT. SR 14, near Phillips Road intersection, operates as a four-lane highway with a daily capacity of approximately 22,700 at LOS C. Therefore, with the addition of project-generated construction traffic, the highway segment would operate at an acceptable LOS C or better, and a significant impact would not occur. Construction traffic would be distributed throughout the day, with the highest concentrations occurring outside of typical peak hours, with construction starting in the early morning hours and ending before the typical PM peak hour (Stantec 2021c).

Therefore, project construction would not conflict with a program, plan, ordinance, or policy establishing the streets and highway system. Impacts would be less than significant in this regard.

Operations

The project is anticipated to require an operational staff of up to 20 full-time employees (includes both day and night shifts) and would generate an estimated 50 trips during the weekday AM and PM peak hours during operations (using an average trip rate of 2.5 trips per employee) (Stantec 2020b). Due to the limited number of operational trips generated, the project would not cause a decrease in the LOS of any area intersection. As such, project operation would not result in a conflict with the County's or City's General Plans supporting vehicular transportation modes. The project would be in conformance with adopted policies, plans, and programs pertaining to the local and regional circulation system and would not otherwise decrease the performance or safety of such facilities. Impacts would be less than significant.

Decommissioning

Decommissioning of the proposed project would result in impacts similar to those resulting with project construction. Therefore, decommissioning activities would not result in traffic generation that would degrade existing LOS at any roadway segment evaluated to below adopted thresholds. Impacts would be less than significant.

Additionally, minor improvements may be required to provide adequate access to the project site from local roadways. However, it is not anticipated that any such improvements would substantially interfere with existing roadway operations or circulation patterns. 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. This would not affect any existing roadways or eliminate any access to existing land uses. None of these activities would result in a conflict with an applicable plan, ordinance, or policy addressing the circulation system. The project does not propose any features that would be inconsistent with applicable policies of the County's General Plan Circulation Element or the California City General City Circulation Element.

Transit, Bicycle, and Pedestrian Facilities

As previously noted, several bus routes operate within the vicinity of the PV solar field. Although bus stops along these routes are not directly adjacent to the site, these bus routes provide regional connections to other surrounding communities within the County. Project construction and/or operation are not anticipated to substantially interfere or conflict with the operation of any existing bus routes in proximity to the proposed project improvements. No changes to any existing bus stops would occur as the result of project implementation.

The Union Pacific Railroad crosses through the western portion of the project site. The solar panels would be installed within the boundaries of the subject property; any crossing of the rail lines for construction or ongoing maintenance purposes would occur at designated crossings. Due to the nature of the proposed improvements, it is not anticipated that the solar fields would adversely affect or interfere with rail operations or conflict with any applicable plans, ordinances, or policies regulating the railway system.

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along surrounding roadways. Due to the generally rural nature of project-affected lands, pedestrian and bicycle traffic is limited. Although some bicyclists may occasionally use local rural roads potentially affected by project construction or operation, such activities would not occur within dedicated bicycle lanes, as such features are not present. Therefore, the project would not result in conflict with an applicable plan, ordinance, or policy establishing the circulation system in this regard.

As such, project construction and operation would not result in a conflict with County or California City General Plan goals or policies supporting vehicular or alternative transportation modes. The project would be in conformance with adopted policies, plans, and programs pertaining to the local and regional circulation system, including roadway, public transit, bicycle, and pedestrian facilities, and would not otherwise decrease the performance or safety of such facilities. Impacts would be less than significant.

Additionally, 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 solar facility 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, bicycle and pedestrian facilities. Impacts would be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance

Kern County

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.14-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

Solar Facility

CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. Such revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shift the focus from driver delay to reduction of GHG 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.

Beginning on July 1, 2020, the provisions of Section 15064.3 applied statewide. Kern County is currently engaged in this process and has not yet formally adopted updated transportation significance thresholds or updated its transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, guidance from OPR's Technical Advisory was relied upon in this EIR to determine the significance of potential transportation impacts (OPR 2018).

The Technical Advisory suggests that lead agencies may screen out VMT impacts using project size criteria, maps of low VMT areas, transit availability, and provision of affordable housing. For the proposed project, the screening criteria related to project size is applicable in regard to the amount of traffic that is generated. The Technical Advisory recommends that absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with an SCS or general plan, projects that generate or attract fewer than 110 trips per day may generally be assumed to result in a less than significant impact (Stantec 2020b).

Construction VMT is temporary and is therefore not applicable to the transportation thresholds of significance recommended in the Technical Advisory, which are based on a measurement of the operational average VMT per capita. For project operations, a conservative estimate of the project's daily trip generation is approximately 50 trips per day for the full facility, based on an average trip rate of 2.5 trips per employee (Stantec 2020b). Therefore, project operations would generate substantially fewer trips than the 110 trip per day threshold. Impacts in this regard are considered to be less than significant.

Mitigation Measures

Kern County

No mitigation measures are required.

City of California City

No mitigation measures are required.

Level of Significance**Kern County**

Impacts would be less than significant.

City of California City

Impacts would be less than significant.

Impact 4.14-3: 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).

Solar Facility

The project would require the delivery of heavy construction equipment and PV solar components using area roadways, some of which may require transport by oversize vehicles. Heavy equipment associated with these components would not be hauled to/from the site daily, but rather would be hauled in and out on an as-needed basis. Nevertheless, the use of oversize vehicles during construction could 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 utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the PV solar site. The need for and number of escorts, such as California Highway Patrol, as well as the timing of transport, would be at the discretion of Caltrans, Kern County, and California City, and would be detailed in respective oversize load permits. Thus, potential impacts would be reduced to a less than significant level. While impacts are anticipated to be less than significant, Mitigation Measures MM 4.14-1KC and MM 4.14-1CC 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 identifying 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 California Vehicle Code and California Street and Highway Codes sections applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles.

Mitigation Measures**Kern County**

MM 4.14-1KC: Prior to the issuance of construction or building permits, the project proponent/operator shall:

- a. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize County-maintained roads,

which may require California Highway Patrol or a pilot car escort. Copies of the approved Construction Traffic Control Plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, Kern County Public Works Department - Development Review Division prior to the commencement of construction or decommissioning activities.

- b. Enter into a secured agreement with Kern County to ensure that any County-maintained roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County.
- c. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department - Development Review Division and the California Department of Transportation offices for District 9, as appropriate. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation *Manual on Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook* and must include, but not be limited to, the following issues:
 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, but not limited to, 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 both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible;
- d. Institute construction work hours as necessary, such that the arrival and/or departure times of workers would be staggered as necessary; and
- e. Identifying vehicle safety procedures for entering and exiting site access roads.
- f. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-County maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern

County Public Works Department - Development Review Division, and Kern County Planning and Natural Resources Department.

- g. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in electronic format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.

City of California City

MM 4.14-1CC: Prior to the issuance of construction or building permits, the project proponent/operator shall:

- a. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved Construction Traffic Control Plan and issued permits shall be submitted to the California City Community Development Department, and California City Public Works Department, prior to the commencement of construction or decommissioning activities.
- b. Enter into a secured agreement with California City to ensure that any City-maintained 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 California City.
- c. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department - Development Review Division and the California Department of Transportation offices for District 9, as appropriate. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation *Manual on Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook* and must include, but not be limited to, the following issues:
 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, but not limited to, 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 both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible.
- d. Institute construction work hours as necessary, such that the arrival and/or departure times of workers would be staggered as necessary.
- e. Identifying vehicle safety procedures for entering and exiting site access roads.
- f. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-County maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the California City Community Development Department, and California City Public Works Department.
- g. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to California City. This information shall be submitted in electronic format. California City, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.14-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.14-1CC, impacts would be less than significant.

Impact 4.14-4: The project would result in inadequate emergency access.

Solar Facility

The project site is located in a rural area with existing primary access roads allowing adequate egress/ingress to the site in the event of an emergency. Construction-, operation-, and decommissioning-related traffic would access the project site from Phillips Road, Gantt Road, Neuralia Road, Pioneer Road, or Sage Street, or through approved access routes within the Eland Solar project site. Driveways and parking lot entrances would be constructed in accordance with Kern County and California City improvement standards, as appropriate. Any off-site roadway improvements would be constructed in conformance with Caltrans and/or County and City codes and regulations, as applicable.

Controlled access gates would be located at the main entrances to the project site. Project access would be provided to off-site emergency response teams that respond in the event of an "after-hours" emergency.

Enclosure gates would be manually operated with a key provided in an identified key box (i.e., Knox box) location. Due to the limited number of employees that would travel to and from the site on a daily basis for operations and maintenance, it is not anticipated that impacts relative to inadequate emergency access would occur. All access roads would be designed and constructed in conformance with applicable County and California City standards, and all gated emergency access points would be accessible to emergency personnel at all times.

The project is not expected to require the closure of public roads during construction or decommissioning, which could inhibit access by emergency vehicles. Nevertheless, during the construction or decommissioning phase of the project, project-related traffic using the local roadways could interfere with emergency response to the project site (or other surrounding properties) or emergency evacuation procedures in the event of an emergency such as a wildfire or chemical spill. To ensure that potential project effects are reduced to the extent feasible, implementation of Mitigation Measures MM 4.14-1KC and MM 4.14-1CC would require preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. With implementation of the proposed mitigation, project impacts relative to adequate emergency access would be reduced to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.14-1KC.

City of California City

Implement Mitigation Measure MM 4.14-1CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.14-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.14-1CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

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.

A list of cumulative projects within a 1-mile and 6-mile radius of the project site are provided in Chapter 3, *Project Description*. The cumulative projects are projects that are proposed and in the review process,

but not yet fully approved; or projects that have been approved, but not fully constructed or occupied. A large majority of these projects are also renewable energy generation facilities designed at utility scale, primarily involving solar PV panels to produce electrical power, at various energy production capacities.

As discussed above, due to the rural nature of the proposed location of the PV solar facility, the substantial distances between the project and other pending projects, and the different schedules for construction among the various projects, the project is not anticipated to substantially conflict with circulation patterns or operations, including roadway, bicycle, transit, and pedestrian facilities. However, implementation of Mitigation Measures MM 4.14-1KC and MM 4.14-1CC would be required to ensure that the project's contribution to cumulative impacts in this regard would remain less than significant. It is anticipated that other cumulative projects would similarly be evaluated based on the existing setting (proximity to transit, pedestrian, and bicycle facilities, etc.) and planned transportation systems to identify and reduce potential impacts, as appropriate.

According to the OPR 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 PV solar facility and would not include the construction of new housing or the generation of new area population. 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 implications of a project's VMT characteristics are long term and cumulative in nature, since the objective of this consideration is to reduce total VMT as a way of reducing transportation sources of GHG emissions, throughout a jurisdiction, region, or statewide. Since local or subregional VMT metrics for specific areas or land use types have not been developed for Kern County, it is not possible at this time to calculate any VMT metrics for this project. It is reasonable, however, to estimate that because this project has a small and skilled workforce that is likely to be people who would commute similar distances as other skilled workers, this 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 other proposed renewable energy projects considered in this cumulative impact analysis. Based on this assessment, cumulative impacts involving VMT patterns would be less than significant.

On a project level, the project would not include a design feature or incompatible uses that would substantially increase hazards on surrounding roadways. However, implementation of Mitigation Measures MM 4.14-1KC and MM 4.14-1CC is proposed and would ensure that the potential for the project to contribute to a cumulative impact would remain less than significant. Similarly, the other cumulative projects considered would be evaluated for their design and intended land use to determine if a potential hazard would occur and to identify appropriate mitigation, if needed.

Similar to the project, it is anticipated that other cumulative projects would be required to implement mitigation to ensure that a Construction Traffic Control Plan is prepared and approved, prior to commencement of construction, in order to minimize potential conflicts or adverse effects on emergency access or circulation. As stated above, the project would implement Mitigation Measures MM 4.14-1KC and MM 4.14-1CC to reduce potential impacts related to adequate emergency access. With implementation

of the proposed mitigation, the project's contribution to a significant cumulative impact in this regard would be reduced to less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.14-1KC.

City of California City

Implement Mitigation Measure MM 4.14-1CC.

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.14-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.14-1CC, impacts would be less than significant.

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4.15.1 Introduction

This section provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed 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 Public Resources Code (PRC) Section 21074(a)(1)(A)–(B). The analysis in this section is based on the results of the Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill (AB) 52, as well as Senate Bill (SB) 18, located in Appendix E of this EIR.

This section is also based on the *Cultural Resources Inventory and Evaluation Report* prepared by Stantec Consulting Services, Inc. (Stantec 2020a; Appendix E), which details the results of a cultural resources records search and field survey for the project. Due to the confidential nature of the location of cultural resources, information regarding locations of tribal cultural resources has been redacted from these reports and is not included in the appendix.

4.15.2 Environmental Setting

Refer to Section 4.5, *Cultural Resources*, of this EIR for further discussion of the tribal cultural resources environmental setting.

Existing Cultural Resources

The area of potential effect (APE) represents the area that would be affected by project development, and therefore, could be subject to potential direct or indirect impacts on cultural resources if such resources are determined to be present. The boundaries of the APE analyzed include areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other such disturbance. Refer to Figure 6, Survey Coverage Map, of the *Cultural Resources Inventory and Evaluation Report* (Appendix E).

A records search of the project area, including a 0.25-mile buffer, was conducted by staff at the Southern San Joaquin Valley Information Center of the California Historic Resource Inventory System on August 19, 2018 (19-326) and September 9, 2019 (19-352). The records search results identified 12 previously recorded sites within the project area and an additional 24 previously recorded sites within 0.25 miles of the project area. Additionally, four previously conducted studies covered portions of the project area (Stantec 2020a).

Native American Correspondence and SB 18 and AB 52 Consultation

The Kern County Planning and Natural Resources Department forwarded the Notice of Preparation (NOP) of a Draft EIR for the Kudu Solar Project to the Office of Planning and Research, State Clearinghouse, (OPR/SCH) on September 15, 2020. The Native American Heritage Commission (NAHC) was included in the list of agencies to be notified by OPR/SCH. The NAHC identifies, catalogs, and protects Native American cultural resources on private and public lands in California. Cultural resources include graves, cemeteries, and places of special religious or social significance to Native Americans. The NAHC also records the historical territories of state-recognized tribes into a database called the Sacred Lands File. A records search of the Sacred Lands File is conducted to ensure that the tribes potentially affected by a project are properly notified and consulted.

The NAHC maintains a contact list of Native American tribes that have traditional lands located within the County's jurisdiction. On September 3, 2019, Stantec submitted a Sacred Lands File search to the NAHC. The NAHC responded via a letter dated September 13, 2019, stating that no Native American cultural resources are known to exist within the project site or the immediate vicinity. The NAHC also provided a list of Native American groups affiliated with the project site to be contacted for additional information regarding tribal cultural resources. On September 23, 2019, SB 18 notification letters were sent to the Native American groups indicated by the NAHC. The letters included a description of the proposed project, the project location, and a notification of the type of consultation that the County was initiating. On [June 17, 2020], the County sent consultation notification letters via certified mail to Native American groups on the County's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation.

Table 4.15-1, *Summary of SB 18 and AB 52 Consultation Efforts*, summarizes the County's consultation efforts to date. At the time of preparation of this EIR, the County has received one response. In response to the County's SB 18 and AB 52 notifications, as of September 13, 2020, only one response was received, coming from Brandi Kendrick of the Kern Valley Indian Community. Ms. Kendrick noted that the project area has, in the past, proven to harbor items or features of cultural significance and requested to be involved in the project. Ms. Kendrick noted that the Tribe prefers that there be a Tribal representative on-site to monitor all ground disturbing activities and provided contact information to allow for continued consultation with County staff. Coordination with the Kern Valley Indian Community remains ongoing at the time of preparation of this EIR.

Table 4.15-1. Summary of SB 18 and AB 52 Consultation Efforts

Contact(s)	Tribe/Organization Contacted	Consultation Type	Date Letter Mailed	Response Received
Robert Robinson, Chairperson; Julie Turner, Secretary; Brandy Kendricks	Kern Valley Indian Community	SB 18; AB 52	6/17/2020	In an email dated September 13, 2020, Kern Valley Indian Community requested additional coordination with the County and indicated preference for a Native American monitor during ground-disturbing activities.
Jessica Mauck, Director-CRM Dept.	San Manuel Band of Mission Indians	SB 18; AB 52	6/17/2020	No Response
Michael Mirelez, Cultural Resources Coordinator	Torres Martinez Desert Cahuilla Indians	AB 52	6/17/2020	No Response

Table 4.15-1. Summary of SB 18 and AB 52 Consultation Efforts, continued

Contact(s)	Tribe/Organization Contacted	Consultation Type	Date Letter Mailed	Response Received
Anthony Madrigal Jr., Tribal Grants Administrator; Darrell Mike, Tribal Chairman	Twenty-Nine Palms Band of Mission Indians	AB 52	6/17/2020	No Response
Colin Rambo, CRM Tech; Octavio Escobedo III, Chairperson	Tejon Indian Tribe	SB 18; AB 52	6/17/2020	No Response
Sally Manning, Env. Director; Danelle Gutierrez, THPO; James Rambeau, Sr., Chairperson	Big Pine Paiute Tribe of the Owens Valley	SB 18	6/17/2020	No Response
Jairo F. Avila, THPO	Fernandeno Tataviam Band of Mission Indians	SB 18	6/17/2020	No Response
Lee Sisco, Chairperson	Santa Rosa Rancheria Tachi Yokut Tribe	SB 18	6/17/2020	No Response
Robert L. Gomez, Jr., Tribal Chairperson	Tubatulabals of Kern Valley	SB 18	6/17/2020	No Response
Delia Dominguez, Chairperson	Kitanemuk & Yowlumne Tejon Indians	SB 18	6/17/2020	No Response
Julio Quair, Chairperson	Chumash Council of Bakersfield	SB 18	6/17/2020	No Response
Neil Peyron, Chairperson	Tule River Indian Tribe	SB 18	6/17/2020	No Response
Kenneth Woodrow, Chairperson	Wuksache Indian Tribe/Eshom Valley Band	SB 18	6/17/2020	No Response
Mona Olivas Tucker, Chairwoman	Vak titvu vak tilhini - Northern Chumash Tribe	SB 18	6/17/2020	No Response

Source: Stantec 2020a (see Appendix E).

4.15.3 Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 United States Code [USC] 470f), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] 800), the Archaeological and Historic Preservation Act

of 1974, and the Archaeological Resources Protection Act of 1979. 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 National Register of Historic Places (National Register). 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 National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register was established by the NHPA of 1966 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 National Register recognizes both historical-period and prehistoric properties, including archaeological sites, that are significant at the national, state, and local levels. To be eligible for listing in the National Register, 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 (US Department of the Interior 1995):

- 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 National Register listing (US Department of the Interior 1995).

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” (US Department of the Interior 1995). The National Register recognizes seven qualities that, in various combinations, define integrity. 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. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution

housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

California Register of Historical Resources

Under the California PRC, Section 5024.19(a), the California Register was created in 1992 and implemented in 1998. The California Register is “an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Certain properties, including those listed in, or formally determined eligible for listing in, the National Register and California Historical Landmarks numbered 770 and higher, are automatically included in the California Register. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

- Criterion 1. It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- Criterion 2. It is associated with the lives of persons important in our past.
- Criterion 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.
- Criterion 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 California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under California Register Criteria 1, 2, and/or 3.

California Points of Historical Interest

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the California Register.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or Southern California);
2. It is associated with an individual or group having a profound influence on the history of California; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California Points of Historical Interest (PHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No 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 will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of 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 California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA Guidelines 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), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is a "unique" archaeological resource. As defined in Section 21083.2 of CEQA, a unique archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the 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 (AB) 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency’s formal notification and the lead agency must begin consultation within 30 days of receiving the tribe’s request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project’s impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has

failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Senate Bill (SB) 18

SB 18 (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to “provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places” (Governor’s Office of Planning and Research 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the Tribal Consultation Guidelines: Supplement to General Plan Guidelines (Governor’s Office of Planning and Research 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government’s jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county’s jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

In accordance with SB 18 and the California Tribal Consultation guidelines, the appropriate native groups were consulted with respect to the project's potential impacts on Native American places, features, and objects.

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 Graves Protection and Repatriation Act of 2001

Codified in the California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (Cal 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," Cal 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 Cal 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.

California Penal Code, Section 622.5

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Construction, operation, and decommissioning 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 tribal cultural resources. There are no policies, goals, and implementation measures in the Kern County General Plan related to tribal cultural resources that are applicable to the project. 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.

City of California City General Plan

Chapter 5. Open Space and Conservation Element

5.15 Conservation Goals, Policies, and Implementation Measures

Goals

- Promote conservation of historical and cultural resources.

Policies

- Preserve historical and cultural resources which may exist and are of significant value to the community now and in the future.
- Encourage public and private efforts toward preserving structures or sites which are of historic value to the community.

Implementation Measure

C-14: The City shall require the preservation of historical and cultural resources by implementation of the following measures:

- Encourage local groups and schools to enhance and promote historical resources and community activities for all residents within the General Plan Planning Area.
- Prior to issuance of a grading or building permit, new development proposals shall be required to complete records and literature search and/or a Phase 1 Assessment to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project as conditions of approval.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have

been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas (Kern County 2009).

4.15.4 Impacts and Mitigation Measures

Thresholds of Significance

As established in Appendix G of the CEQA Guidelines, the Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria to determine if a project could potentially have a significant impact with respect to tribal cultural resources.

A project would have a significant impact on tribal cultural resources if it 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, and that is:

- a) Listed or eligible for listing in the CRHR, 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.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to tribal cultural resources, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.15-1a: 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 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 Historic Places, or in a local register of historical resources as defined in Public Resources Section 5020.1(k).

As part of the information-gathering process for the cultural resources technical report (Stantec 2020a), the NAHC was contacted to request a search of the Sacred Lands File in September 2019. The record search did not identify any sacred lands within the project boundary (see Appendix E). However, the absence of specific site information does not necessarily indicate the absence of cultural resources in the project area as unknown cultural resources may be located on-site.

In response to the AB 52 notification efforts, the Kern Valley Indian Community has requested notification of CEQA projects in the County. As shown in Table 4.15-1, *Summary of SB 18 and AB 52 Consultation Efforts*, the County initiated the consultation process in writing on June 17, 2020. Only one response was received to date in response to the County's SB 18 and AB 52 notifications, coming from Brandi Kendrick of the Kern Valley Indian Community requesting that a Tribal representative be on-site to monitor all project-related ground disturbing activities. Coordination with the Kern Valley Indian Community remains ongoing at the time of preparation of this EIR. No additional requests for consultation were received as part of the AB 52 consultation efforts.

No tribal cultural resources have been identified to date within the project boundary. If no tribal cultural resources are identified during the consultation process, a significant impact to known tribal cultural resources would not occur. However, subsurface disturbances (e.g., trenching, excavation, grading) associated with project construction or decommissioning would have the potential to impact unknown tribal cultural resources. To ensure proper protection of any unknown resources, should they be encountered during project-related ground disturbance activities, Mitigation Measures MM 4.5-1KC through MM 4.5-3KC and MM 4.5-1CC through MM 4.5-3CC, which require the presence of an on-site Native American monitoring during project grading and construction and/or decommissioning, would be implemented. 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 resources.

Additionally, human remains may be encountered during ground-disturbing activities. Although unlikely, if human remains are discovered, all work must stop in the immediate vicinity of the discovered remains. The Kern County coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed, pursuant to Health and Safety Code Section 7050. If the remains are deemed to be Native American, the NAHC must be contacted by the coroner so that a "Most Likely Descendant" can be designated and further recommendations regarding treatment of the remains provided. With implementation of Mitigation Measures MM 4.5-4KC and MM 4.5-4CC, potential project impacts on undiscovered human remains would be reduced to less than significant. Refer to Section 4.5, *Cultural Resources*, for a discussion of impacts to archaeological resources and a list of mitigation measures.

Mitigation Measures

Kern County

Implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC, impacts would be less than significant.

Impact 4.15-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As noted above, the Kern Valley Indian Community identified a potential tribal cultural resource within the project site as part of the AB 52 and SB 18 consultation process. Given that tribal cultural resources were not identified within or immediately adjacent to the project site, the project is not anticipated to cause a substantial direct or indirect adverse change in the significance of a known tribal cultural resource. However, as noted under Impact 4.15-1a, the project would have the potential to result in impacts to unknown tribal cultural resources. Implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-1CC through MM 4.5-4CC would reduce such potential impacts to less than significant. Refer to Section 4.5, *Cultural Resources*, for a discussion of impacts to archaeological resources and a list of mitigation measures.

Mitigation Measures

Kern County

Implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the project, as described 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 western Antelope Valley and the Fremont Valley. This geographic scope of analysis is appropriate because the resources within this area are expected to be similar to those that occur on the project area because of their proximity, their similarities in environments and landforms, and their location within the same Native American tribal territories. The area considered is large enough to encompass any project effects on tribal cultural resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect any such tribal cultural resources.

Relative to CEQA, the importance of a tribal cultural resource is the value of the resource to California Native American tribes culturally affiliated with a certain project area. On a cumulative level, the cumulative loss of the tribal cultural resource must therefore be evaluated. No impact would occur if development would avoid or otherwise preserve known tribal cultural resources within dedicated on-site open space. However, if such resources cannot be avoided or preserved, a significant impact would occur, and the loss of the resource, in combination with the potential loss of other tribal cultural resources, requires evaluation on a cumulative level.

Cumulative projects evaluated in the EIR would have the potential to be considered in a cumulative context with the proposed project's incremental contribution, and that are included in the analysis of cumulative impacts relative to cultural and tribal cultural resources. Refer to Table 3-3, *Cumulative Projects List*, and Figure 3-20, *Cumulative Projects Map*, of Chapter 3, *Project Description*.

Development that has occurred over past decades in Kern County has resulted in adverse impacts on innumerable tribal cultural resources. However, the adoption of state and federal laws related to tribal cultural resources, such as AB 52, has provided a mechanism for consultation between California Native American tribes and lead agencies to address potential impacts of development activities on known and/or unknown tribal cultural resources. Although inadvertent discoveries and potential impacts may still result on a project-by-project basis based on location, development type, and/or availability of data, compliance with regulatory procedures generally mitigate potential impacts to tribal cultural resources. Federal, state, and local laws protect tribal cultural resources in most instances, but this is not always feasible, particularly when in-place preservation may complicate the implementation of a development project. Future development may conflict with these resources through inadvertent destruction or removal resulting from grading, excavation, construction and/or decommissioning activities.

Although no known tribal cultural resources of significance or human remains have been documented on the project site, implementation of the proposed project could contribute to potential cumulative impacts on unknown tribal cultural resources, as well as buried human remains. Past, present, and foreseeable projects have affected, or would have the potential to affect, tribal cultural resources throughout the region over time. However, there are federal, state, and local laws designed to protect such resources. These laws have led to the discovery, recordation, preservation, and curation of artifacts and historic structures.

The project would implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-1CC through MM 4.5-4CC, which address the discovery and recovery of unknown cultural resources through construction monitoring, identification of potential cultural resources, and evaluation of the significance of a discovery. Mitigation measures would be implemented to reduce potential impacts from project construction on undiscovered resources, if encountered, to less than significant. Similarly, with conformance to applicable federal, state, and local regulations, combined with the implementation of mitigation, it is anticipated that other cumulative development projects would be adequately addressed and impacts on tribal cultural resources would be reduced to less than significant, or to the extent feasible.

Individual project-level impacts associated with tribal cultural resources would be less than significant with incorporation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-1CC through MM 4.5-4CC, and the proposed project and cumulative projects would be subject to conformance with applicable federal, state, and local requirements for the protection of such resources. Based on these conditions, the project's contribution to potential impacts on tribal cultural resources is considered less than cumulatively considerable.

Mitigation Measures

Kern County

Implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measures MM 4.5-1KC through MM 4.5-4KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measures MM 4.5-1CC through MM 4.5-4CC, impacts would be less than significant.

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4.16.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project pertaining to demand for operational utilities (water, stormwater control, wastewater, and solid waste disposal). This section describes existing infrastructure and levels of service and evaluates whether any improvements are necessary to accommodate the project. Information in this section pertaining to stormwater control is based primarily on the *Kudu Solar Hydrology Report*, prepared by Westwood Professional Services (Westwood 2019), and information concerning water supplies is based primarily on the *Kudu Solar Project Water Supply Assessment* prepared by Stantec (Stantec 2020c) located in Appendix I and Appendix L of this EIR, respectively.

4.16.2 Environmental Setting

Water Supply

There are typically three sources of supply water: (1) natural sources; (2) man-made sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Man-made 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 to ensure that there is no possibility of direct human consumption. The project site is not served by a public water system, and therefore is not covered by any active Urban Water Management Plans.

California City and Kern County both deliver water to service connections in their respective service territories via the California City Water Department (CCWD) and the Kern County Water Agency (KCWA). The CCWD and KCWA are described below, to provide a background understanding of the water purveyors respective to the jurisdictions responsible for issuing conditional use permits for the project. The Project's water supply would be obtained from on- or off-site groundwater wells in the Fremont Valley Groundwater Basin, other nearby solar projects, directly from the Antelope Valley-East Kern Water Agency (AVEK), which is a wholesaler of State Water Project (SWP) supplies to potable water purveyors, and/or from a local retailer such as the CCWD or the Mojave Public Utility District (MPUD), which in addition to receiving imported SWP from AVEK, also source supplies from treated surface and groundwater.

City of California City

California City overlies the Fremont Valley Groundwater Basin in southeastern Kern County. California City receives its water supply via the CCWD, which provides SWP water purchased from AVEK and locally produced groundwater resources from the Fremont Valley Groundwater Basin. The CCWD is not a

SWP wholesale contractor, and therefore purchases its supply of imported SWP water from the AVEK which is a wholesale SWP contractor. The CCWD is the sole water supplier for California City.

California City is underlain by 203 square miles of the Fremont Valley Groundwater Basin, of which the California City Subbasin (CCSB) encompasses 142,451 acres and is hydraulically connected to the Antelope Valley Groundwater Basin. The CCWD pumps an average of 3,300 acre feet per year (AFY) from the CCSB, which provides CCWD customers with approximately 75 percent of their potable water supply. The CCWD also owns all water rights for the CCSB, having purchased them in 1960 through an agreement between the Boron Valley Water Development Company and Boron Valley Community Service District, which later became California City Service District (Appendix L of this EIR).

Kern County

As with California City, Kern County also has a water district, the KCWA. The KCWA is the second largest wholesale contractor participating in the SWP. The KCWA is a designated Groundwater Sustainability Agency within the Kern County Subbasin and is also a participant agency in the Kern Groundwater Authority, which manages the subbasin.

The project site does not overlie the Kern County Subbasin. If the proposed project uses groundwater, it would be pumped from the Fremont Valley Groundwater Basin which underlies California City, as described above. If the proposed project uses imported SWP water, the water may be purchased directly or may be purchased from a local retailer such as CCWD or MPUD.

Groundwater Supply

Fremont Valley Groundwater Basin

The project site is located within the Fremont Valley Groundwater Basin, which underlies Fremont Valley in Eastern Kern County and northwestern San Bernardino County. As defined by DWR, the Fremont Valley Groundwater Basin (Basin No. 6-46) covers an estimated 336,700 acres, and is bounded on the northwest by the Garlock fault zone against impermeable crystalline rocks of the El Paso Mountains and Sierra Nevada, the east by crystalline rocks of the Summit Range, Red Mountain, Lava Mountains, Rand Mountains, Castle Butte, Bissel Hills, and Rosamond Hills, and on the southwest by the Antelope Valley Groundwater Basin along a groundwater divide from the mouth of Oak Creek through Middle Butte to exposed basement rock near Gem Hill. Natural recharge of the basin includes percolation of ephemeral streams that flow in from the Sierra Nevada. The general groundwater flow direction is toward Koehn Lake at the center of the valley, with no appreciable quantity of groundwater flowing out of the basin (DWR 2004).

According to the California Statewide Groundwater Elevation Monitoring (CASGEM) Program, which is tasked with monitoring, reporting, and prioritizing groundwater basin conditions, as part of the Sustainable Groundwater Management Act (SGMA), the Fremont Valley Groundwater Basin is designated as a “low priority” groundwater basin, and as a result, is not required to have a groundwater sustainability plan in accordance with SGMA. The California Department of Water Resources (DWR) defines a low priority basin as one that uses less than or equal to 2,000 AF of groundwater per year (DWR 2020). Because of the low priority status, the Fremont Valley Groundwater Basin is not subject to SGMA requirements.

Furthermore, the basin is not adjudicated, and therefore, management is assumed by Kern County. For a discussion of Basin characteristics, please refer to Section 4.10, *Hydrology and Water Quality*, of this EIR.

Antelope Valley-East Kern Water Agency (AVEK)

The AVEK is located within the Fremont Valley Groundwater Basin. AVEK is the SWP contractor in the Fremont Basin Region, and holds a 75-year contract with DWR for the delivery of SWP water through 2035, and it is anticipated that the SWP contracts will be extended through 2085. AVEK's contract with DWR allocates 144,844 AFY of SWP water to AVEK, representing the third largest allocation of the 29 SWP contractors. To increase regional supply reliability, AVEK has developed groundwater banking programs in the Antelope Valley Groundwater Basin. Groundwater banking allows AVEK to store excess water, when available, from the SWP during wet periods, allowing for recovery during dry and high demand periods, or during a disruption of deliveries from the SWP. While AVEK's groundwater banking projects are located outside the Fremont Basin region, the increase in supply reliability provides benefits to AVEK's entire service area. SWP supplies to potable water purveyors, such as the Mojave Public Utility District, and a retail provider of untreated SWP supplies to agricultural users.

Wastewater

The Kern Sanitation Authority provides maintenance and wastewater service for Kern County and the California City Wastewater Treatment Plant provides maintenance and wastewater service for California City; however, the unincorporated parts of the Fremont Valley (including the project site) that do not have a sewer line connection utilize septic systems to treat household, commercial, and industrial wastewater.

Stormwater Drainage

There are no existing stormwater drainage systems on-site. The topography of the project site is relatively flat. However, moderate topographic irregularities and folds are also present. Elevations in the project site range from roughly 2,460 feet above mean sea level at the southwest corner of the project site to approximately 2,180 feet above mean sea level at the northeast corner of the project site. Stormwater follows natural drainage patterns on the land surface. Several previously mapped ephemeral streams occur within the project site, generally flowing to the northeast and ultimately draining into Koehn Dry Lake, approximately 7 miles northeast of the project site.

Electricity, Natural Gas, and Telecommunication

The site is currently undeveloped, and contains no electrical facilities, no natural gas pipelines, and no telecommunication facilities are located on the site.

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.

The Kern County Waste Management Department operates seven landfills throughout the County. Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi. The project site does not currently generate any solid waste. The closest operational landfill to the project site is the Mojave-Rosamond Landfill, which is a Class III landfill that accepts waste from industrial, mixed municipal, construction and demolition, and agricultural uses, located approximately 13 miles southwest of the project site. The landfill has a remaining capacity of 76,310,297 cubic yards out of a total maximum capacity of 78,000,000 cubic yards and has an estimated closure date of 2123 (CalRecycle 2020a). Boron Sanitary Landfill, located approximately 22 miles to the southeast, is also a Class III landfill that accepts mixed municipal, industrial, green materials, construction and demolition, and agricultural wastes. Boron Sanitary Landfill has closure date of 2048, and a remaining capacity of 191,380 cubic yards out of a total permitted volume of 1,057,000 cubic yards. (CalRecycle 2020b). A summary of the Mojave-Rosamond and Boron sanitary landfill capacities is provided in Table 4.16-1, *Active Kern County Public Works' Landfills Near Project Site*.

Table 4.16-1. Active Kern County Public Works' Landfills Near Project Site

Landfill	Distance from Project Site	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Maximum Permitted Throughput (tons/day)	Anticipated Year of Closure
Mojave-Rosamond Recycling and Sanitary Landfill 400 Silver Queen Road Mojave, CA 93501	2.5 miles	78,000,000	76,310,297	3,000	2123
Boron Sanitary Landfill 11400 Boron Avenue Boron, CA 93516	18 miles	1,057,000	191,380	200	2048

Source: CalRecycle 2020a, 2020b.

Kern County is responsible for meeting the California Integrated Waste Management Act of 1989 (AB 939). AB 939 required cities and counties to reduce the amount of solid waste being sent to landfills by 50 percent by January 1, 2000. It also required cities and counties to prepare solid waste planning documents. These documents include the Source Reduction and Recycling Element, the Household Hazardous Waste Element, and the Nondisposal Facility Element. 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 a 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.

The Kern County Waste Management Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals:

- a. 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.;
- b. 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;
- c. Financial assistance for operation of the City of Bakersfield Green Waste Facility;
- d. The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;
- e. Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);
- f. Christmas tree recycling campaign (participates jointly with the City of Bakersfield);
- g. Telephone book recycling program (co-sponsors with Community Clean Sweep);
- h. Community Clean Sweep summer workshops called “Trash to Treasure,” which educate children about recycling and other Kern County Waste Management Department programs (sponsor);
- i. An innovative elementary school program called the “Clean Kids Hit the Road Puppet Show” (operates in collaboration with Community Clean Sweep); and
- j. Recycling trailers for churches, schools, and nonprofit organizations.

4.16.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

Assembly Bill 341

Since the passage of Assembly Bill (AB) 939, diversion rates in California have been reduced to approximately 65 percent, the statewide recycling rate is approximately 50 percent, and the beverage container recycling rate is approximately 80 percent. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75 percent goal:

1. Moving organics out of the landfill;

2. Expanding the recycling/manufacturing infrastructure;
3. Exploring new approaches for state and local funding of sustainable waste management programs;
4. Promoting state procurement of post-consumer recycled content products; and
5. Promoting extended producer responsibility.

To achieve these strategies, the State recommended legislative and regulatory changes including mandatory organics recycling, solid waste facility inspections, and revising packaging. With regard to construction and demolition, the State recommended an expansion of California Green Building Code standards that incentivize green building practices and increase diversion of recoverable construction and demolition materials. Current standards require 50 percent waste diversion on construction and some renovation projects, although this may be raised to 65 percent for nonresidential construction in upcoming changes to the standards. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost or anaerobic digestion before residual wastes are considered for energy recovery.

Water Supply and Water Quality

California Water Code 10912

Section 10912 of the Water Code requires a city or county that determines that a project, as defined, is subject to the CEQA to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment. The project is subject to CEQA and may be considered a project requiring preparation of a water supply assessment because it is a proposed industrial facility occupying more than 40 acres of land.

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 proposed project as it is an industrial use of more than 40 acres.

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 Lahontan Region RWQCB. However, the proposed project is not expected to discharge waste into the local sewer system, and therefore, is not required to prepare and submit the described report.

California Department of Water Resources

DWR is a department within the California Resources Agency responsible for managing California's water resources, systems, and infrastructure, including the SWP, in a responsible, sustainable manner. DWR's 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. .

State Water Resources Control Board

The National Pollutant Discharge Elimination System (NPDES) permit program was established per 1972 amendments to the Federal Water Pollution Control Act, or Clean Water Act (CWA), for the purpose of controlling discharges of pollutants from point sources (Section 402) into waters of the United States. Amendments to the CWA created a new section to the act, which is devoted to stormwater permitting (Section 402[p]), with individual states designated for administration and enforcement of the provisions of the CWA and the NPDES permit program. The SWRCB issues both general construction permits and individual permits under this program.

Solid Waste

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 (Public Resources Code [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 Integrated Solid Waste Management Act

Pursuant to the California Integrated Solid Waste Management Act of 1989 (PRC 40050, et seq.) or AB 939, all cities in California are required to reduce the amount of solid waste disposed in landfills. AB 939 required a reduction of 25 percent by 1995 and 50 percent by 2000. Contracts that include work that will generate solid waste, including construction and demolition debris, have been targeted for participation in source-reduction, reuse, and recycling programs.

C&D waste is heavy, inert material, which 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.

Waste should be diverted from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of construction and demolition debris. AB 939 also required cities and counties to prepare solid waste planning documents (e.g., the Source Reduction and Recycling Element, the Household Hazardous Waste Element, and the Nondisposal Facility Element. All three of these documents, as well as the Integrated Waste Management Plan, approved February 1998 by the California Integrated Waste Management Board (now California Department of Resources Recycling and Recovery or CalRecycle), have been approved for Kern County. The Kern County Integrated Waste Management Plan is the long-range planning document for landfill facilities.

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 develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The CalRecycle board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (PRC 40050 et seq. or AB 939, codified in PRC 40000), administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

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:

- k. Submittal of a Construction Waste Management Plan prior to project construction for approval by the Kern County Building Department;
- l. Recycling and/or reuse of a minimum 50 percent of construction & demolition waste; and
- m. Recycling or reuse of 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing (Kern County 2017).

Electrical, Natural Gas, and Telecommunications

California Energy Commission

The California Energy Commission (CEC) regulates the provision of natural gas and electricity within California. The 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 MW or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing State responses to energy emergencies.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, sewer, railroad, rail transit, and passenger transportation companies. 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 CPUC. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting customers against fraud.

Protection of Underground Infrastructure Code Section 4216

A required under California Government Code section 4216, prior to excavation activities, as defined as any operation in which earth, rock, or other material in the ground is moved, removed, or otherwise displaced by means of tools or equipment for the purposes of grading, trenching, digging, ditching, drilling, augering, etc., the operator must notify a Regional Notification Center System, which will demarcate the locations of existing underground infrastructure. The intent of the notification and demarcation is to provide advance warning of excavations or other work close to existing subsurface installations, for the purpose of protecting those installations from damage, removal, relocation, or repair.

Local

Fremont Valley Integrated Regional Water Management Plan

On October 21, 2014, the California City, the Mojave Public Utilities District, and the Antelope Valley-East Kern Water Agency signed a memorandum of understanding forming the Fremont Basin Regional Water Management Group. The MOU defines the organization, responsibilities, and governance structure for the Fremont Basin Regional Water Management Group. The Fremont Valley Integrated Regional Water Management Plan (IRWMP) documents the development and implementation of effective strategies that promote sustainable water use, guarantee a reliable water supply, improve water quality, and endorse environmental stewardship within the region. The plan also describes the water supply portfolio and demands in the region, as well as highlight the existing and projected water management challenges with respect to climate change impacts and population changes.

Fremont Basin Groundwater Management Plan

Groundwater management plans (GWMPs) were required to be developed and submitted to DWR under previous State legislation including AB 359, AB 3030, and SB 1938. With adoption of the SGMA in 2014, GWMP requirements were largely replaced by Groundwater Sustainability Plans (GSPs). Per SGMA, no new GWMPs were adopted in medium- or high-priority basins after January 1, 2015, and existing GWMPs remain in effect until GSPs are adopted in their place (for medium- or high-priority basins). The Fremont

Valley Groundwater Basin is not designated as medium- or high-priority, and is therefore not subject to SGMA requirements, including for a GSP, at this time.

The Fremont Valley Basin GWMP of 2018 (Fremont Basin RWMG 2018) was developed to eventually serve as a GSP, with the primary goal of documenting groundwater conditions to help inform the long-term sustainable management of groundwater resources in the Plan area. The Fremont Valley Basin GWMP was developed in parallel with the IRWMP, described above, and the Fremont Valley Basin Salt and Nutrient Management Plan. Groundwater quantity and quality conditions documented for the Fremont Valley Groundwater Basin in the 2018 GWMP will facilitate groundwater resources management in the plan area and inform future groundwater studies, including those for SGMA purposes.

The Fremont Valley Basin GWMP identifies water management projects that support regional water supply reliability, promote sustainable use of water resources, and provide drinking water that meets regulatory requirements.

These projects, which range in development from conceptual to fully implemented, include the following:

- a. Fremont Valley Groundwater Basin GSP development;
- b. Well blending and distribution system enhancements;
- c. Conjunctive use programs;
- d. Wastewater treatment plant upgrades;
- e. Recycled water projects;
- f. Septic to sewer conversion;
- g. Stormwater capture and reuse/recharge;
- h. Central Park Lake restoration;
- i. Water main replacements;
- j. New water meters; and
- k. Water distribution system upgrades.

As noted above, the GWMP is intended to serve as a pre-GSP document, providing guidance for the sustainable management of the Fremont Valley Groundwater Basin.

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 ensure 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 IWMP was approved February 1998 by the California Integrated Waste Management Board (now CalRecycle). The Kern County IWMP is the long-range planning document for landfill facilities.

Kern County General Plan

The Kern County General Plan (Kern County 2009) provides guidance on public utilities and related services. Sections of the plan that are relevant to the proposed project are included below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.4 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.
- Goal 7: Facilitate the provision of reliable and cost-effective utility services to residents of Kern County.
- Goal 9: Serve the needs of industry and Kern County residents in a way that does not degrade the water supply and the environment and protect public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.

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.

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

Goals

- Goal 3: Ensure the development of resource areas minimize effects on 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 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 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 19: Work with other agencies to define regulatory responsibility concerning energy related issues.

1.10 General Provisions

1.10.1 General Provisions, Public Services and Facilities

Policies

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

- Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations, administered by the Environmental 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 characterizes the quality of the upper groundwater in the project vicinity and evaluation of the extent to which, if any, the proposed use of alternative septic systems will adversely impact groundwater quality. If the evaluation indicates that the upper most groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would id the alternative

septic system is installed, the applicant shall 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.

Implementation Measures

Measure B: The County should work with affected state and federal agencies and interest groups to establish consistent policies for solar energy development.

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas (Kern County 2009).

California City General Plan

The California City General Plan (2009) provides guidance on public utilities and related services. Sections of the plan that are relevant to the proposed project are included below.

5.15 Conservation Goals, Policies, and Implementation Measures

Goals

- Ensure an adequate water supply for existing residents and business and planned growth and development.
- Protect groundwater quality.

Policies

- Protect the community’s environmental setting from deterioration, compromising the quality of life enjoyed by the existing and future residents.
- Provide sufficient water to meet the existing and projected needs of the community, while emphasizing conservation goals.
- Continue to promote and encourage water conservation to residents and businesses in the community.
- Establish a water conservation program encouraging and promoting xeriscaping and municipal recycled water usage.
- Encourage the Antelope Valley East Kern Valley Water Agency and the City Public Works Department to notify all new residential, commercial, and industrial development of water conservation and recycling measures implemented by the agencies which supply water to their area.
- Coordinate with AVEK and the City Public Works Department to implement the water master plan that addresses new infrastructure, as well as improvements and upgrades to the existing water systems in the General Plan Planning Area.
- Require compliance for development projects with the requirements of the California Water Code Section 10910 regarding water supply.

Implementation Measures

- C-1 The City shall require that new development proposals provide evidence that sufficient water supply, including fire flow, exists to serve the project without impacting service to existing uses or resulting in the long-term decline and overdraft of groundwater sources.

4.16.4 Impacts and Mitigation Measures

Methodology

Potential impacts related to water supply and drainage facilities associated with construction and operation of the proposed project were evaluated qualitatively and quantitatively using the *Kudo Solar Project Hydrology Study* (Westwood 2019) and the *Kudo Solar Project Water Supply Assessment* (Stantec 2020c) located in Appendix I and L of this EIR, respectively. In addition, current data obtained from Kern County and State of California about the capacity of landfills was used to identify potential solid waste impacts. The evaluation of impacts is based on professional judgment, analysis of the County’s land use policies, and significance criteria established in Appendix G of the *CEQA Guidelines*, 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 Appendix G of the CEQA Guidelines, to determine if a project could potentially have a significant impact with respect to utilities and service systems.

A project would 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 reasonable foreseeable future development during normal, dry and multiple dry years.
- c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition the provider's existing commitments;
- d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

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 needed in the EIR; therefore this issue was scoped out of this EIR. It was determined that the project would not:

- c. Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As detailed in the IS/NOP, the proposed project would generate a very insubstantial volume of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. As a part of the proposed project, construction of a septic system would be included and all wastewater generated by project operations would be handled on-site. Therefore, no impacts to any existing wastewater treatment facilities would occur.

Refer to Section 5.1, *Environmental Effects Found Not to be Significant*, for further explanation.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to Utilities and Service Systems, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures

required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.16-1: 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 telecommunication facilities, the construction or relocation of which could cause significant environmental effects.

Construction

Water

The proposed project would require an estimated 400 AF of water during construction for dust suppression, concrete manufacturing, truck wheel washing, equipment washing, and fire safety. It is anticipated that water would be obtained from existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok projects, the Eland 1 Solar Project, directly from AVEK, or from a commercial source. Potable water would be brought to the site via water trucks or bottled water for drinking and domestic needs for construction workers. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded water facilities. Impacts would be less than significant.

Wastewater

Construction of the project would generate a minimal volume of wastewater. During construction, wastewater would be contained within portable toilet facilities and disposed of at an approved disposal site. The Kern County Public Health Services Department/Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and if required the project proponent would provide documentation of a portable toilet pumping contract. A standard on-site septic tank and leach field may be used at the O&M building to dispose sanitary wastewater, designed to meet operation and maintenance guidelines required by Kern County and California City laws, ordinances, regulations, and standards. No off-site sewage or disposal connections to a municipal sewer system exist or are proposed and, thus, impacts during construction would be less than significant.

Stormwater Drainage

The project area is presently drained by natural drainage channels and sheet flow and does not rely on constructed stormwater drainage. The existing project area pattern and runoff characteristics could potentially be altered by project activities during earth disturbance work during construction and decommissioning, such as the grading, excavation, and equipment installation and/or removal. As required in Mitigation Measures MM 4.10-1KC and MM 4.10-1CC, a Stormwater Pollution Prevention Plan (SWPPP) would be implemented during construction, which would include best management practices to manage stormwater drainage and runoff from the site. Further evaluation of the storm water drainage of the site can be found in Section 4.10, *Hydrology and Water Quality*, of this EIR.

As mentioned above in Mitigation Measures MM 4.10-1KC and MM 4.10-1CC and in compliance with National Pollutant Discharge Elimination System General Construction Permit requirements, the project's site-specific SWPPP would minimize the discharge of wastewater during construction and incorporate a Water Quality Management Plan that include best management practices for runoff control.

Therefore, the proposed project would not affect existing storm water drainage systems during construction to the extent that relocation or construction of new or expanded stormwater drainage facilities would be required. A storm drainage plan for the developed site will be prepared prior to issuance of building permits that would identify locations and physical characteristics of any permanent stormwater control facilities. Such facilities could have impacts due to ground disturbance affecting biological or cultural resources, as well as water quality. Please refer to those sections of this EIR for discussion of potential impacts that could result from the project's permanent improvements, including stormwater control facilities.

Electric Power

No electrical facilities are located on the project site and the site is currently undeveloped. Electricity for construction would be provided by LADWP and a hookup would be installed on the project site to provide electricity on-site for both construction and operational phases of the project). Because construction of the project would not displace existing electrical facilities, and would tie into off-site facilities, relocation of electrical facilities would not be required. During construction, installation of the new electrical infrastructure would create a temporary environmental disturbance, however, since the electrical power lines would be placed underground for the duration of operation and maintenance, there would be less than significant impacts.

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 impacts would be less than significant.

Telecommunications

No existing telecommunication facilities are located on-site. During construction, cellular or satellite communication technology may be used for both internet and telephone systems, which would not require construction of new telecommunication facilities.

The project would require telecommunications facilities to meet the communication requirements for interconnecting with the LADWP Barren Ridge Substation and to support project operations during monitoring. Fiber optic communication lines would follow the electrical collector system. The communication lines will link each solar inverter module to the O&M building, which would house the supervisory control and data acquisition (SCADA) system. Hard-wired (landline) systems for operational use will be installed during completion of electrical construction activities. Since construction of the fiber optic communication lines would follow the electrical collector system and land line systems would also follow the electrical collector system, relocation of existing telecommunication facilities would not be required. The construction of new telecommunication facilities would occur within the same construction disturbance footprint as the project facilities; thus, construction of such facilities would not result in additional environmental impacts not already addressed in this EIR. Therefore, impacts would be less than significant.

Operation

Water

During project operation, quarterly panel washing activities are expected to generate a long-term operational water demand of 50 AFY. Water for panel washing, fire suppression, and operation of the proposed O&M building(s) on the project site would be supplied from existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained from one of the nearby Springbok projects, the Eland 1 Solar Project, or from a commercial source. Impacts would be less than significant.

Wastewater

As discussed above, as a part of the proposed project, a standard on-site septic tank and leach field would be used at the O&M building to dispose sanitary wastewater, designed to meet operation and maintenance guidelines required by Kern County and California City laws, ordinances, regulations, and standards. Therefore, the proposed project would not affect existing water or wastewater treatment facilities. No impacts would be expected.

Stormwater Drainage

As previously discussed, there are no constructed stormwater drainage systems present on-site. The existing pattern and concentration of runoff could potentially be altered by the proposed facility development, including equipment, structural enclosures and foundation installation, and other impervious features. As discussed in Section 4.10, *Hydrology and Water Quality*, of this Draft EIR, Mitigation Measures MM 4.10-2KC and MM 4.10-2CC. would be implemented as part of the proposed project, which requires preparation of a final hydrologic study and drainage plan to detail engineering design measures to manage stormwater flows and reduce potential increases in stormwater runoff. Potential increase in runoff would be addressed with the construction of detention basins, retention basins, erosion control, or other drainage facilities in accordance with the guidelines from the Kern County Development Standards Division 4 Standards for Drainage, including Chapter III, Retention Basin Design. The design features would be developed on-site along with the rest of the project construction and infiltration would occur similar to existing conditions. No off-site connections to municipal stormwater facilities exist or are proposed; thus, there would be no impact to such facilities.

Electric Power

Project operation would generate 500 MW of renewable electrical energy for distribution on the state-wide utility grid. The existing infrastructure has adequate capacity to accept the additional 500 MW that would be generated by the project without modifications. The project would require minimal electric power for operation and maintenance, which would be provided by the on-site PV solar system or via the LADWP hook-up installed during construction. Therefore, relocation or construction of new or expanded electrical facilities would not be required to support project operations and impacts would be less than significant.

Natural Gas

No natural gas facilities would be required for operation of the project. The project includes a solar array, battery storage, and O&M facilities that would not require heating from natural gas during operation.

Therefore, operation of the project would not require the relocation or construction of new or expanded natural gas facilities and no impact would occur.

Telecommunications

The project would require telecommunications facilities to meet the communication requirements for interconnecting with the LADWP Barren Ridge Substation and to support project operations during monitoring. During operation, the SCADA system would allow individual solar inverter modules and other project elements to be monitored and controlled in the O&M building from remote locations. Additional fiber optic lines required for the operational phase of the project would be located in proximity to the other telecommunication facilities and would not result in additional demand such that the construction of off-site facilities would be required. Therefore, impacts would be less than significant.

Mitigation Measures

Kern County

Implement Mitigation Measure MM 4.10-2KC. (See Section 4.10, *Hydrology and Water Quality*, for full text).

City of California City

Implement Mitigation Measure MM 4.10-2CC. (See Section 4.10, *Hydrology and Water Quality*, for full text).

Level of Significance after Mitigation

Kern County

With the implementation of Mitigation Measure MM 4.10-2KC, impacts would be less than significant.

City of California City

With the implementation of Mitigation Measure MM 4.10-2CC, impacts would be less than significant.

Impact 4.16-2: The project would have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

The project water demands would be supplied through either on-site wells, producing from the Fremont Valley Groundwater Basin, or would be supplied by local purveyors, as available, from AVEK. Water requirements for the project during construction and operation were determined in the *Water Supply Assessment* prepared for the project (see Appendix L of this EIR). The project's water demand is estimated to be 400 AF during the 12 to 18-month construction period, and 50 AFY during operations. The water required during decommissioning has not been estimated but would be similar to construction and mainly required for dust suppression. Drinking water for construction personnel would be provided in bottles trucked to the project site. Non-potable water required during construction, operation, and decommissioning would be obtained from existing on-site wells. Alternatively, water may be obtained from one or more off-site source(s) and delivered to the project site via truck. If off-site water is used, it would likely be obtained

from one of the nearby Springbok projects, the Eland 1 Solar Project, or from a commercial source. Table 4.16-2, *Total Project Water Demands* provides the total project water demand amortized over the project construction and operating lifetime. The following analyzes the available water supplies for the project.

Table 4.16-2. Total Project Water Demands

Project Phase	Water Demand
Construction	
Total Construction Demand (over 1.5 years)	400 acre feet
Operation	
Total Operational Demand (over 35 years)	1,750 acre feet
Amortized Annual Demand	
Total Amortized Demand	58.9 acre feet per year

Fremont Valley Groundwater Basin

The project site is located within the Fremont Valley Groundwater Basin, has averaged groundwater production of approximately 32,000 AFY with an overall groundwater storage estimated to be 4,800,000 acre-feet (Stantec 2020c), and as discussed previously, is not adjudicated, as the Basin is designated as a low priority by DWR, and is not in overdraft. The annual demand for operation of the project would be 50 AFY, considered to be a minor volume when compared to the average groundwater produced yearly throughout the basin.

As such, the proposed project would not adversely affect groundwater supply availability under varying climatic conditions, including normal year, single-dry year, and multiple-dry year scenarios, as discussed further in the *Kudu Solar Project Water Supply Assessment* (Stantec 2020c), located in Appendix L of this EIR. It is reasonably assumed sufficient water supplies are available for the proposed project. In this context, water supplies would be sufficient and impacts would be considered less than significant.

Current and projected water supply and demand estimates are presented in the IRWMP for the Fremont Valley Basin region. As described in the IRWMP, there is a limited understanding of storage and withdrawal capacity in the basin and, because the basin is not adjudicated, pumping is not currently managed by a Watermaster. The IRWMP and other local planning efforts describe that increasing industrial water uses in the basin will continue to increase, including for solar energy developments.

The IRWMP describes that the four largest industrial water user categories are the solar, cannabis, mining, and manufacturing industries. The Fremont Valley GWMP also describes that population in this area is expected to grow more than 35 percent by 2040, and that industrial uses including for the solar industry are expected to grow substantially over this same timeframe. The Fremont Valley GWMP provides current and projected water demand rates for the primary water uses in the area, including industrial uses, which account for solar developments. These projections are shown in Table 4.16-3, *Current and Projected Water Demand for Fremont Valley Basin (AF)*.

Table 4.16-3. Current and Projected Water Demand for Fremont Valley Basin (AF)

	2015	2020	2025	2030	2035	2040
Residential	5,278	7,340	7,687	8,045	8,408	9,328
Agricultural	647	647	647	647	647	647
Industrial	6	65	271	477	684	890
Plan Area Total	5,931	8,052	8,605	9,169	9,739	10,865

Source: Fremont Basin RWMG 2018.

Table 4.16-3, *Current and Projected Water Demand for Fremont Valley Basin (AF)*, indicates that the GWMP accounts for increasing industrial water uses in the Fremont Valley Basin region, which include solar energy developments such as the project. The project's amortized 58.9 AFY water demand represents more than 6 percent of the total industrial water demand growth forecast between 2020 and 2040. The GWMP also estimates that total water supplied within the Fremont Valley GWMP area is expected to increase by more than 60 percent by 2040 to match increasing water demands, accounting for agricultural growth rates of baseline, light, medium, and heavy, respectively. The GWMP determined that the light and medium agricultural growth scenarios are likely to be sustainable, whereas the heavy agricultural growth scenario may not be sustainable and could produce a condition of overdraft.

Projections of water supply availability in the Fremont Valley Groundwater Basin vary depending upon the source and are highly dependent upon projected imported and surface water supplies in the area. As mentioned, this groundwater basin is identified by DWR as Low Priority, meaning that overdraft conditions are not present or imminent, and future management of groundwater resources in the area will include development and implementation of a GSP, which may impose pumping restrictions if needed to facilitate groundwater supply reliability. In conclusion, estimates of increasing water demands in the project area do account for solar developments such as the project and, although estimates of water supply availability are not specific to groundwater, it is generally anticipated that water supply availability will match water demand through conjunctive use management of groundwater and surface water resources.

Antelope Valley – East Kern Water Agency

Water supply availability projections for AVEK are more quantifiable than for the Fremont Valley Groundwater Basin, because there is more data available for imported surface water supplies than for unmonitored groundwater supplies. Water supply projections provided by AVEK indicate that there are anticipated water shortages under varying climatic conditions in the future, but it is also anticipated that such shortages will be accommodated by increasing groundwater pumping, including through the recovery of banked supplies or return flows, and/or reducing demand by the retail agencies within AVEK's service territory.

Table 4.16-4, *AVEK Projected Supplies and Demand (AF)*, summarizes AVEK's supply and demand projections in normal year, single-dry year, and multiple-dry year climatic scenarios. In each of these scenarios, AVEK assumes it will pump its annual Overlying Production Right of 3,550 AFY from the Antelope Valley Groundwater Basin. Projections for future deliveries of SWP water are estimated based on DWR's modeled supply estimates (AVEK 2016).

Table 4.16-4. AVEK Projected Supplies and Demand (AF)

		2020	2025	2030	2035
Normal Year					
Supply Totals		89,010	89,010	89,010	89,010
Demand Totals		83,680	85,630	85,940	86,260
Difference		5,330	3,380	3,070	2,750
Single Dry Year					
Supply Totals		89,010	89,010	89,010	89,010
Demand Totals		83,680	85,630	85,940	86,260
Difference		5,330	3,380	3,070	2,750
Multiple Dry Years					
First Year	Supply Totals	56,950	56,950	56,950	56,950
	Demand Totals	83,680	85,630	85,940	86,260
	Difference	(26,730)	(28,680)	(28,990)	(29,310)
Second Year	Supply Totals	62,750	62,750	62,750	62,750
	Demand Totals	83,680	85,630	85,940	86,260
	Difference	(20,930)	(22,880)	(23,190)	(23,510)
Third Year	Supply Totals	74,350	74,350	74,350	74,350
	Demand Totals	83,680	85,630	85,940	86,260
	Difference	(9,330)	(11,280)	(11,590)	(11,910)
Units in acre-feet per year					
Source: AVEK 2016					

In normal and single-dry years, AVEK has sufficient water supplies to meet projected demands. Under multiple-dry year scenarios, the projections indicate water supply shortages due to curtailed SWP deliveries. It is anticipated that the difference will be made up by increased groundwater pumping of banked supplies and/or reductions in demand by the retail agencies. The 2016 UWMP identifies programs such as water rationing that may be implemented in order to address future water shortages (Appendix M, *Water Supply Assessment*, of this EIR).

Local Retailers

As mentioned, the project may also source water from local retailers, which include MPUD and CCWD. The following Table 4.16-5, *MPUD and CCWD Projected Supplies and Demand (AF)*, summarizes MPUD and CCWD's surplus projections in normal year, single-dry year, and multiple-dry year climatic scenarios. As shown, both MPUD and CCWD each have adequate water supplies in normal year, single-dry year, and multiple-dry year climatic scenarios to supply the project.

Table 4.16-5. MPUD and CCWD Projected Supplies and Demand (AF)

	2020	2025	2030	2035
MPUD				
Normal Year Surplus¹ Supply	900	803	699	586
Single Dry Year Surplus^{1,2}	690	690	690	690
Multiple Dry Years (3rd Year Drought) Surplus²	690	690	690	690
California City (CCWD)				
Normal Year Surplus¹ Supply	3,407	3,719	2,949	2,716
Single Dry Year Surplus^{1,2}	3,407	3,719	2,949	2,716
Multiple Dry Years (3rd Year Drought) Surplus²	3,407	3,719	2,949	2,716
¹ Surplus denotes the remaining water supplies after total demand, which comprises of urban demand and losses, has been met. ² MPUD and CCWD can supply water by either purchases through AVEK or from groundwater. For the single dry year and multi-dry year water budget projections, only surface water supplies would be immediately affected by drought conditions, and MPUD can rely on groundwater supplies. Therefore, water volume available for MPUD and California City would not change. Units in acre-feet per year Source: CCWD 2017.				

As shown in the possible water sources of Fremont Valley GWMP, AVEK, and local water retailers, adequate water is available to serve the project's long-term demands. Additionally, the project may also source water from other nearby solar projects that have remaining available water supplies.

In conclusion, long-term water demands associated with the project are generally accounted for in regional water supply plans and, although regional water shortages may occur in the area during the project's lifetime, sufficient sources will be secured to serve the project needs on an as-needed basis. In this context, water supplies are anticipated to be sufficient and impacts would be considered less than significant.

Mitigation Measures

Kern County

No mitigation would be required.

City of California City

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.16-3: The project would generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals.

The minimal amount of solid waste generated at the project site would most likely be disposed of by a permitted hauler at the Mojave-Rosamond Sanitary Landfill (approximately 13 miles southwest from the project site). The landfill has a remaining capacity of 76,310,297 cubic yards out of a total maximum capacity of 78,000,000 cubic yards and has an estimated closure date of 2123 (CalRecycle 2020a). Project construction is anticipated to begin fourth quarter of 2021 for 12 to 18 months.

Construction

It is anticipated the project would not generate substantial amounts of non-recyclable waste during construction. Currently, the project site contains no development and, therefore, there would be no demolition or removal of large debris. Materials brought to the project site would be used to construct facilities, and few residual materials are expected. Solar modules would be delivered to the site via shipping containers packaged via use of wood and cardboard materials. The shipping containers materials for module deliveries would be recycled and are not anticipated to generate non-recyclable waste. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. Nonhazardous construction refuse and solid waste would either be collected and recycled or disposed of at a local landfill. Any hazardous waste generated during construction would be disposed of at an approved location.

The small amount of solid waste generated by construction activities is not expected to exceed the capacity of these landfills. The Mojave-Rosamond Recycling and Sanitary Landfill (approximately 13 miles to the southwest) is the closest landfill to the project site and, therefore, would be the most likely recipient of project site solid waste. The Mojave-Rosemond Recycling and Sanitary Landfill has a remaining capacity of 76,310,297 cy with an anticipated closure year of 2123 (CalRecycle 2020a). The next closest active landfill is the Boron Sanitary Landfill, which is located 22 miles southeast of the site, with a remaining capacity of 191,380 cy and anticipated closure date of 2048. Both landfills are Class III landfills and, therefore, accept wastes from construction and demolition as well as industrial sources, but do not accept hazardous waste, hot ashes, and liquids of any kind. As shown in Table 4.16-1, *Active Kern County Public Works' Landfills Near Project Site*, both landfills have significant capacity remaining (CalRecycle 2020a, 2020b). In addition, with the implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction. Therefore, construction impacts of the project to local solid waste disposal infrastructure and attainment of solid waste reduction goals would be less than significant.

Operation

The project site would produce small amounts of waste associated with O&M activities. PV solar system waste typically includes broken and rusted metal, defective or malfunctioning modules, electrical materials, and empty containers and other miscellaneous solid materials. Most of these materials would be collected and delivered back to the manufacturer for recycling. Small amounts of typical household/office refuse would be generated by workers during maintenance visits.

As described above, the Mojave-Rosamond Sanitary Landfill has adequate capacity, and the recycling of decommissioned materials would further reduce the waste stream. Post-construction operational solid

wastes would most likely be disposed of at the Mojave-Rosamond Sanitary Landfill, which is permitted to operate through 2123, respectively.

Therefore, operational solid waste could be disposed of at this landfill during the operational lifespan of the project (approximately 35 years). In addition, with the implementation of Mitigation Measure MM 4.16-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during operation. Therefore, operational impacts of the project to local infrastructure and attainment of solid waste reduction goals would be less than significant.

Decommissioning

Solar PV panels have a lifespan of over 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time. During decommissioning, a collection and recycling program would be implemented to recycle project components and minimize disposal of project components in landfills. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities, in accordance with all applicable federal, State, and local regulations. Following decommissioning, the project site would be returned to predevelopment conditions. The decommissioning process could result in larger volumes of waste that require disposal. However, implementation of a recycling coordination required in Mitigation Measure MM 4.16-1 would reduce impacts associated with decommissioning to local infrastructure and attainment of solid waste reduction goals to a less than significant level.

Mitigation Measures

- MM 4.16-1KC:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.
- a. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, 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 on-site Recycling Coordinator shall also be responsible for ensuring waste requiring special disposal are handled according to state local regulations that are in effect at the time of disposal.
 - d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.
 - e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations, and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.

- MM 4.16-1CC:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.
- a. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, 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 on-site Recycling Coordinator shall also be responsible for ensuring waste requiring special disposal are handled according to state local regulations that are in effect at the time of disposal.
 - d. Contact information of the coordinator shall be provided to the California City Community Development Department prior to issuance of building permits.
 - e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations, and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.

Mitigation Measures

Implement Mitigation Measures MM 4.16-1KC and MM 4.16-1CC.

Level of Significance after Mitigation

Kern County

With the implementation of Mitigation Measure MM 4.16-1KC, impacts would be less than significant.

City of California City

With the implementation of Mitigation Measure MM 4.16-1CC, impacts would be less than significant.

Impact 4.16-4: The project would not comply with Federal, State, and Local management and reduction statutes and regulations related to solid waste.

The project would generate solid waste during construction, operation, and decommissioning. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. AB 341 requires Kern County to attain a waste diversion goals of 75 percent by 2020 through reduction, recycling, or composting. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan
- Recycle and/or reuse a minimum 50 percent C&D waste

- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing.

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC would ensure compliance with waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the project. The proposed project would be required to comply with all federal, state, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less than significant impacts regarding compliance with management and reduction statutes and regulations related to solid waste.

Mitigation Measures

Implement Mitigation Measures MM 4.16-1KC and MM 4.16-1CC.

Level of Significance after Mitigation

Kern County

With the implementation of Mitigation Measure MM 4.16-1KC, impacts would be less than significant.

City of California City

With the implementation of Mitigation Measure MM 4.16-1CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative analysis of impacts on water supply are the related projects that would impact the Fremont Valley Groundwater Basin. The geographic scope of analysis for stormwater drainage, solid waste disposal, electricity, natural gas, and telecommunications includes the projects that would be relying on the same facilities and infrastructure. Impacts of the proposed project would be cumulatively considerable if the incremental effects of the proposed project when combined with other past, present, or reasonably foreseeable projects (refer to Table 3-3, *Cumulative Projects List*, in Chapter 3, *Project Description*) would result in a significant cumulative effect. Physical impacts to public services, utilities, and service systems are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities. There is little to no growth associated with the proposed project and nearby other solar and wind energy projects, thereby limiting the potential to contribute to demand for a particular service.

As described above, the proposed project would place minor demands on water, wastewater, stormwater drainage, solid waste disposal (during construction and operation), electricity, natural gas, and telecommunications.

Water

The project has multiple sources of available water supplies to serve the project construction and operational demands. Several utility-scale renewable energy projects are proposed in the Fremont Valley that would

impact the existing water supply, which is derived almost entirely from the Fremont Valley Groundwater Basin. The water-intensive use period for renewable energy projects is typically the construction phase. Given the limited water supply in the area, other projects are expected to either rely on new or existing wells (similar to the project) or truck in their water supply. Any projects that cannot secure a water supply would not move forward to construction or operation. Therefore, cumulative impacts related to water supply and facilities would be less than significant.

Wastewater

The project is located in an area with no wastewater treatment provider and is not expected to generate a significant amount of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. A standard on-site septic tank and leach field will be used at the O&M building to dispose sanitary wastewater, designed to meet operation and maintenance guidelines required by Kern County and California City laws, ordinances, regulations, and standards. No off-site sewage or disposal connections to a municipal sewer system are proposed. Well water used on-site is not anticipated to require treatment for construction and operational uses. Therefore, the proposed project would not contribute to a cumulative impact on any municipal wastewater treatment facilities.

Stormwater Drainage

The project area is presently drained by natural drainage channels and sheet flow and does not rely on constructed stormwater drainage. The existing pattern and concentration of runoff could potentially be altered by project activities, such as the grading of access roads. However, the amount of runoff across the project site would not be substantially altered, such that new stormwater drainage facilities are needed. In accordance with Mitigation Measures MM 4.10-1KC, MM 4.10-1CC, MM 4.10-2KC, and MM 4.10-2CC, the proposed project would implement a SWPPP during construction and would develop the site in accordance with a drainage plan that would incorporate measures to offset increases in stormwater flows caused by the project. No impact to any existing municipal storm drainage infrastructure would occur due to project land alterations or site runoff. Other projects in the vicinity would be required to offset substantial increases in stormwater as well per County requirements.

Surrounding projects would also be required to prepare a drainage plan that would help avoid substantial increases of stormwater generated on-site by their respective ground disturbance. Depending on the findings of their respective drainage plans, these projects may need to construct stormwater control structures on-site to reduce the potential for increased stormwater runoff. Therefore, the project would not substantially contribute to a cumulatively impact on stormwater drainage facilities.

Electric Power

There are no existing electrical facilities on site. The proposed project would tie into off-site facilities and provide 500 MW of renewable electrical energy to the state-wide utility grid. Electricity demand of the project would be minimal and would be provided by the on-site PV system or via a connection to a LADWP hook-up. This project, in combination with other cumulative solar projects in East Kern County, would provide a significant increase in renewable electrical energy sources that could be utilized on the statewide electricity grid and therefore provide a beneficial cumulative impact on electrical energy resources.

Natural Gas

There are no existing natural gas facilities on the project site nor would natural gas be required for construction and operation. Therefore, the project would not contribute to a cumulatively considerable impact related to natural gas demand and facilities.

Telecommunications

As mentioned previously, the project would require only on-site telecommunications facilities to meet the communication requirements for interconnecting with the LADWP Barren Ridge Substation and to support project operations during monitoring. As such, the project would not result in any off-site impacts involving new telecommunications infrastructure and would not contribute to impacts from other projects that might require off-site facilities. The proposed project, in combination with cumulative projects, would increase demand on telecommunication facilities. However, demand associated with other proposed renewable energy projects and other cumulative development is expected to be within the existing or future capacities of the affected telecommunications provider(s), which could be among several different provider networks. Therefore, cumulative impacts related to telecommunications facilities would be less than significant.

Solid Waste

The proposed project would generate a minimal amount of waste and is not expected to significantly impact Kern County landfills. The Mojave-Rosamond Landfill is expected to operate until 2123. However, generation of waste from cumulative projects, including other solar and wind projects, could result in a cumulative impact. To ensure that the proposed project reduces the amount of waste sent to landfills, implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC requires that debris and waste generated shall be recycled to the extent feasible, and an on-site recycling coordinator be designated by the project proponent to facilitate recycling efforts. With implementation of Mitigation Measures MM 4.16-1KC and MM 4.16-1CC, the project's incremental contribution would be less than cumulatively considerable. Furthermore, other cumulative projects would also be required to comply with State and local waste reduction policies that would reduce the total volume of wastes sent to landfills for disposal. Cumulative impacts are anticipated to be less than significant.

Conclusion

In conclusion, the proposed project would be self-contained and would not have a significant impact on public or private utilities. The incremental effects of the proposed project would also not be substantial enough to result in a cumulatively considerable impact on utilities and service systems with implementation of Mitigation Measures MM 4.10-1KC, MM 4.10-1CC, MM 4.10-2KC, MM 4.10-2CC, MM 4.16-1KC, and MM 4.16-1CC. Furthermore, the proposed project would generate a substantial amount of clean and renewable electrical energy that would result in a beneficial impact on electrical energy services and reduce future stress on energy service providers as energy demand grows in Kern County and Southern California.

Mitigation Measures

Kern County

Implement Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, and MM 4.16-1KC.

City of California City

Implement Mitigation Measures MM 4.10-1CC, MM 4.10-2CC, and MM 4.16-1CC.

Level of Significance after Mitigation**Kern County**

With the implementation of Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, and MM 4.16-1KC, the project's incremental contribution to cumulative utilities and service systems impacts would be less than significant.

City of California City

With the implementation of Mitigation Measures MM 4.10-1CC, MM 4.10-2CC, and MM 4.16-1CC, the project's incremental contribution to cumulative utilities and service systems impacts would be less than significant.

4.17.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for wildfire for the project. It also discusses potential impacts related to wildland wildfire that would result from implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based on the project plans and California Department of Forestry and Fire Protection (CalFire) and Kern County Fire Hazards Severity Zone Maps (FHSZs).

4.17.2 Environmental Setting

Site Characteristics and Fire Environment

CalFire maps FHSZs based upon factors such as fuel, slope, and fire weather to identify the degree of fire hazard throughout California (e.g., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and are therefore of greater concern.

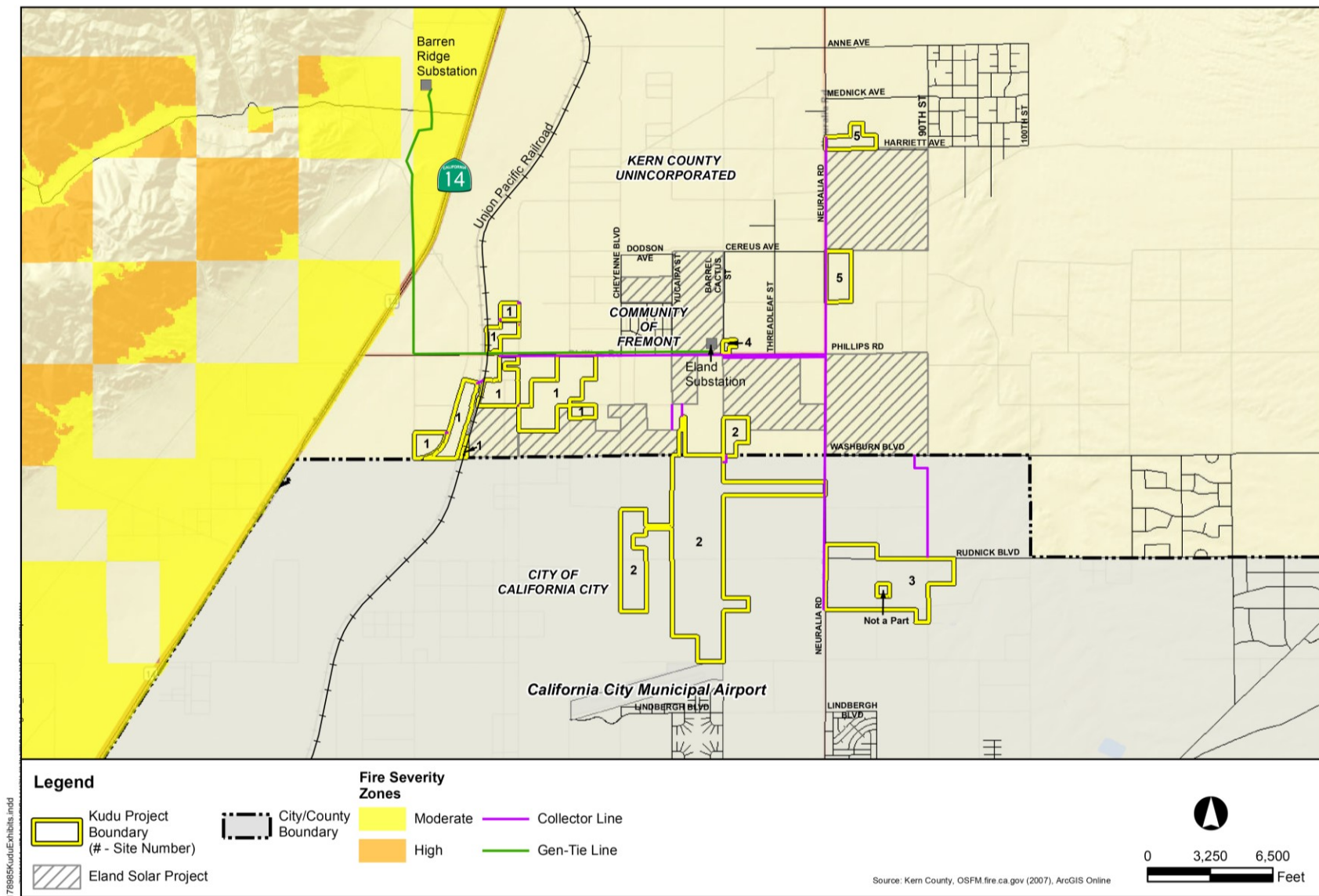
According to the FHSZ map published by CalFire, the project site is not located within or near state responsibility areas (SRAs) or lands classified as very high fire hazard severity zones (VHFHSZ). The nearest VHFHSZ is located more than 3 miles away from the project site (CalFire 2007a); refer to Figure 4.17-1, *State Responsibility Areas*. The project site is classified as Local Responsibility Area (LRA) Moderate; thus, the potential for wildfire on the project site exists, but is not considered high and is not anticipated to physically impede existing emergency response plans, emergency vehicle access, or emergency personnel access to the site (CalFire 2007b); refer to Figure 4.17-2, *Local Responsibility Areas*.

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CalFire's California Statewide Fire Map, which shows the history of fires back through 2013 (CalFire 2019a) and CalFire's Fire and Resource Assessment Program (FRAP) Fire Perimeters: Wildfires 1950-2018 map (CalFire 2019b). Based on a review of these maps, no fires in recorded history have burned across the project site.

Vegetation (Fuels)

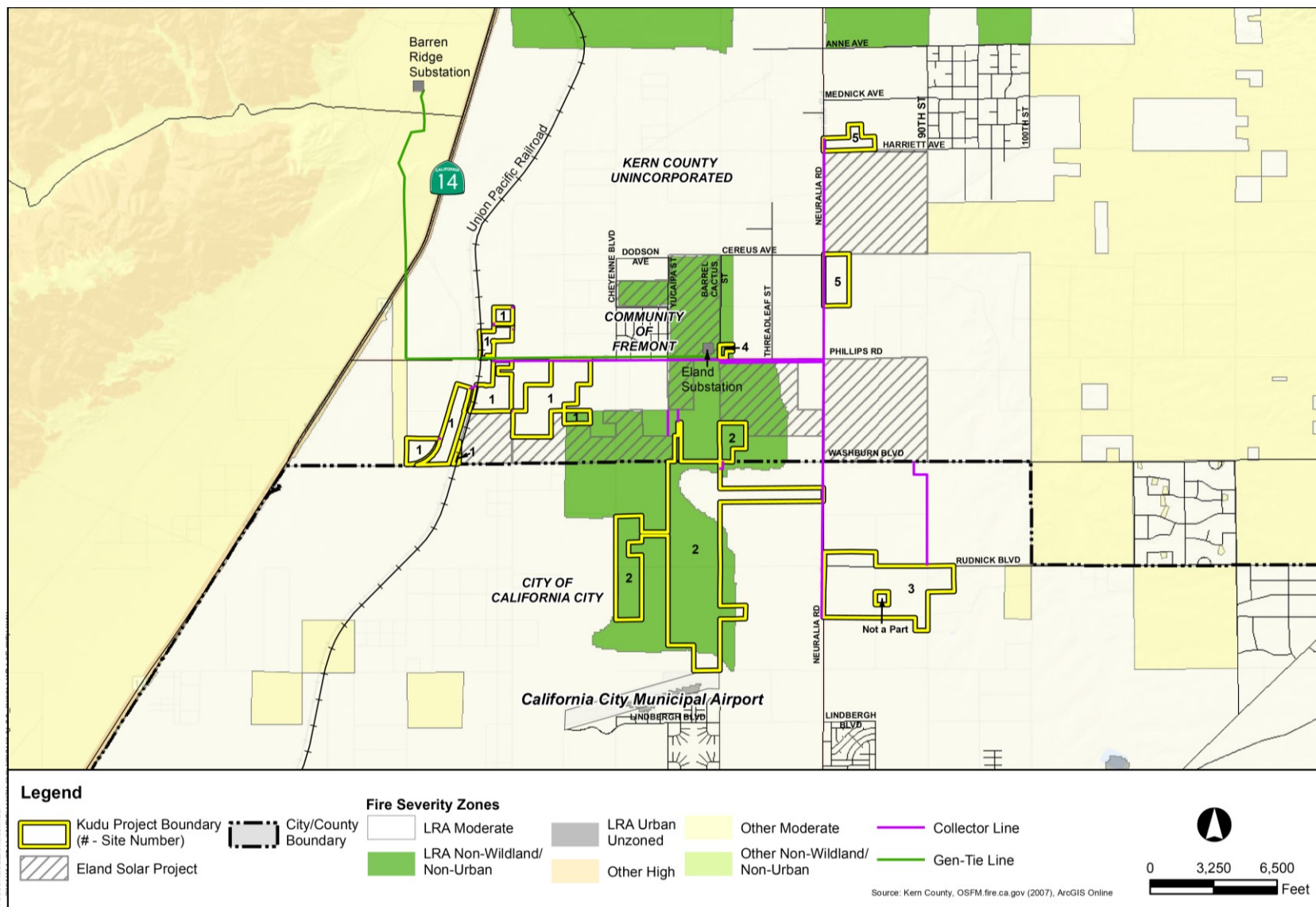
Native vegetation on-site is typical of that found throughout the Mojave Desert, dominated by creosote bush and white bursage on slopes and plains and saltbush scrub in the alkaline basin. Many of the project parcels have been previously disturbed and/or cultivated. Currently, these areas include fallow agricultural fields and cleared parcels that were never put into agricultural production. Much of this fallowed land is still barren of native shrub cover and has been colonized by rubber rabbitbrush.



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.17-1. State Responsibility Areas



ZCC 24, Map No. 152 GPA 10, Map No. 152
 CUP 28, Map No. 152 CUP 19-04 (California City)

KERN COUNTY, CALIFORNIA ■ KUDU SOLAR ■ BY: 69SV 8ME LLC

Figure 4.17-2. Local Responsibility Areas

Fires in the desert environment are generally infrequent and of low severity because production of annual and perennial herbs seldom provides a fuel load capable of sustaining fire. The creosote bush community that makes up the majority of the vegetation on-site is not considered to have a high flammability potential because the shrubs are too sparse to carry fire; however, the foliage of creosote bush, which contains resin, is considered flammable (USFWS 2018).

Topography

The project site is located in the Mojave Desert Region of the Desert Floristic Province. Landforms in the region include granite-derived basin floors, flood plains, alluvial fans, small clay pans, and rock pediments. Mountains and hills, residuum weathered from basalt, granite, and sandstone, are also present.

Approximate elevations within the project site range from 2,174 feet above mean sea level (amsl) in the northeastern portion of the site, to roughly 2,460 feet amsl in the southeast portion of the project site. The site is relatively flat and features numerous ephemeral desert drainages trending to the northeast, which ultimately drain into Koehn Dry Lake, northeast of the project site.

Winds

The project site is situated in the Mojave Desert portion of the Mojave Desert Air Basin (MDAB). The MDAB is disconnected from the southern California coastal and central California valley regions by the Tehachapi Mountains to the west and by the San Gabriel Mountains to the south. Prevailing winds in the MDAB come from the west and southwest and are due to a combination of the proximity of MDAB to coastal and central regions and the location of the Sierra Nevada Mountains to the north that prevent air from passing through. High winds may occur during certain times of the year, resulting in blowing dust and/or increasing the potential for the occurrence or spread of wildfire, becoming particularly dangerous in the fall when summer droughts typically create the driest conditions.

4.17.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

2019 California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or

structure throughout California. Chapter 6 (Building Services and Systems) of the code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems addressed include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment, and promote prompt response to fire emergencies. The 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.

2019 California Building Code, Chapter 7A

Chapter 7 (Fire and Smoke Protection Features) of the 2019 California Building Code (CBC) details the materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Area is defined in Section 702A of the CBC as a geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. The CBC details the materials, systems, and assemblies used for structural fire resistance and fire resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

Public Resources Code 4291-4299

California Public Resources Code Sections 4291-4299 require that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability may be maintained, as may single specimens of trees or other vegetation that are maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Additionally, the Public Resources Code outlines infraction fees, certification, and compliance procedures applicable with state and local building standards, including those described in Subdivision (b) of Section 51189 of the Government Code.

Local

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

Fremont Rural Community Plan Area

A portion of the project site is identified on the Fremont Rural Community Plan Area Map. The maps prepared for these areas are considered to be interim for the applicable Map Code 4.2 areas and are in effect until formal Specific Plans can be adopted for each respective community. No formal written plans have been adopted to date and the goals and policies of the Kern County General Plan therefore remain the governing tool for development occurring within these areas.

City of California City General Plan

Chapter 6. Safety Element

6.8 Public Safety Goals, Policies, and Implementation Measures

Goals

- Provide and implement effective emergency services that will protect the health, safety, and welfare of residents and workers within the community.
- Protect the health, safety and welfare of residents, businesses, and property from fire danger.

Policies

- Ensure that new development does not create a burden on adequate levels of emergency response services, including fire protection services and law enforcement services.
- Work with the Fire Department and Police Department to ensure sufficient services can adequately protect and serve the community.

- Ensure that new development proposal shall provide street widths and clearance areas are consistent with the City's requirements and, therefore, adequate to accommodate fire protection and emergency response vehicles.
- Continue to enforce the Health, Fire, and Building standards for all new development proposed and rehabilitation of existing structures.
- Continue to monitor water supply for fire-flow to insure adequacy of fire protection services.
- Review all new development proposals for fire safety considerations.

Implementation Measures

S-23: The City shall require that new development proposals demonstrate the availability of fire, police, emergency response, and solid waste disposal services during the environmental review and discretionary approval process.

S-25: The following measures shall be implemented to ensure adequate fire and police protection services in the incorporated areas of the City:

- a) All new development proposals shall be reviewed by the California City Fire Department and the California City Police Department to ensure the continuation of adequate levels of service.
- b) If additional Fire Department or Police Department station sites are determined to be required, sites shall be identified and mechanisms to obtain these sites shall be defined. These shall include, but not be limited to, the dedication of land for such purposes or payment of proportional share of fees as a condition of development.
- c) The City will continue to work with local organizations and the County Sheriff's Department and Fire Department to continue administration of the Mojave Desert Community Response Plan.

S-27: The City shall review all new development proposals for fire safety considerations. This shall include the economic impacts on the City's ability to provide adequate levels of service. Items such as the incremental increase in staffing and requirements for equipment shall be analyzed and appropriate project level mitigation measures shall be applied. Measures may include specialized fire protection consideration to be incorporated into the design of the project and the contribution of funding for both staffing and equipment needs.

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 made to more specifically address conditions in Kern County. 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; and the installation and maintenance of adequate means of egress. It also provides for the issuance of permits and collection of fees related to such activities.

Kern County Fire Department Wildland Fire Management Plan

The Kern County Fire Department (KCFD) Wildland Fire Management Plan was adopted in 2009 and assesses the wildland fire situation throughout the LRA 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 in the local area. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas that may be potential locations for costly or damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes measures to reduce future fire management and protection costs and minimize potential loss from wildfire. According to the plan, the project site is located within a moderate FHSZ (KCFD 2009).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March 2018, is the current document that assesses the wildland fire situation throughout the SRA within Kern County. The document includes stakeholder contributions and priorities and identifies strategic targets for pre-fire solutions as defined by the people who live and work in the local area. The plan provides a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. The plan gives an overview of KCFD battalions and ranks these areas in terms of priority needs, as well as identifying the SRA areas. According to the plan, 69 percent of the land area within Kern County is located within a SRA. The County is divided into six fuel management areas: Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 1 (Tehachapi), which lies within a moderate FHSZ within the Tehachapi fire plan management area (KCFD 2018).

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 2019 County Fire Code and is an official interpretation of the Kern County Fire Marshal's Office. The Standard outlines installation requirements for PV ground-mounted and roof-mounted solar panels. Ground-mounted solar panel requirements identified by this Standard address water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD 2019).

4.17.4 Impacts and Mitigation Measures

Methodology

Potential project impacts associated with wildfires were evaluated based upon various resources including CalFire maps showing FHSZs, FRAP, and fire history; vegetation data from the *Biological Evaluation* (EPC 2020; see Appendix D-1 of this EIR); and project location maps. Conditions such as potentially influencing wind and slope conditions and project characteristics were also considered. Wildfire impacts are considered on the basis of: (1) off-site wildland fires that could impact the proposed project; and (2) on-

site generated combustion that could affect surrounding areas. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

As established in Appendix G of the CEQA Guidelines, the Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria 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 were located in or near SRAs or lands classified as very high FHSZs, and if it 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.
- 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.

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 one of these environmental issue areas and that no further analysis would be needed in the EIR; therefore this issue area is thus scoped out of this EIR. It was determined that the project would not:

- 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.

As detailed in the IS/NOP, the project site is not considered to be a high risk area for landslides as it is relatively flat and is not anticipated to be subject to post-fire slope instability, or drainage changes that would expose people or structures to significant risks; therefore no further analysis will be conducted in the EIR.

As previously stated in Section 3.6, *Proposed Project*, of this EIR, the Kudu Solar Project proposes to share the right-of-way alignment and gen-tie line constructed as part of the Eland 1 Solar Project. As described in Section 2.7, *Incorporation by Reference*, potential impacts resulting with construction, operation, and/or decommissioning of the gen-tie line were previously analyzed in the Eland 1 Solar Project Supplemental EIR (SEIR) (ESA 2019). Relative to wildfire, the Kudu Solar Project would not result in any new or increased environmental impacts, as a result of anticipated construction, operation, or decommissioning activities, beyond that previously evaluated and disclosed in the Eland 1 Solar Project SEIR. Therefore, analysis of potential project-related impacts, and any resulting mitigation measures required to reduce such impacts, is not included herein. Please refer to the Eland 1 Solar Project SEIR which provides a comprehensive discussion of potential impacts and associated mitigation measures.

Project Impacts

Impact 4.17-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The site is located in a rural, sparsely developed area with limited population. The KCFD offers its Ready!Set!Go! Plan, which provides guidance for evacuation during a wildfire event (KCFD n.d.). Additionally, the County implements its Emergency Operations Plan (EOP), which establishes an emergency management organization and provides for the integration and coordination of efforts of the County with those of surrounding cities, special districts, and the state for emergency response and short-term recovery. The plan identifies an emergency management program, defines the County/Operational Area emergency management organization (i.e., local, regional, state, federal), includes standard operating procedures, and provides for public awareness and education (KCFD 2008).

As noted in Section 4.14, *Transportation*, the need for and number of any escorts (i.e., from California Highway Patrol), as well as the timing of transport, during construction would be at the discretion of Caltrans, Kern County, and/or the City of California City, as applicable, and would be detailed in respective oversize load permits. Mitigation Measures MM 4.14-1KC and MM 4.14-1CC requires that all oversized vehicles used on public roadways during construction obtain the required permits and 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 a.m. and p.m. peak hours. This would ensure that the potential for project-related construction traffic to interfere with vehicular circulation or emergency access along local roadways would be minimized, including during any times of emergency evacuation.

Additionally, project operations would generate minor volumes of daily traffic traveling to and from the site for work and/or for intermittent maintenance purposes. During the operational phase, the project would employ up to 20 full-time equivalent (FTE) personnel (or personnel hours totaling 20 FTE positions, or an average of 800 personnel hours per week) who would commute to the site. This translates into approximately 50 trips per day. It is not known where the employees would live or how long their commuting trips would be. However, due to the low number of operational trips, it is not anticipated that project-generated operational traffic would result in congestion or obstruction of access along any local roadways that could impair emergency response or evacuation activities. Impacts in this regard would be less than significant.

Additionally, in compliance with applicable County Fire Code and CBC requirements, project construction and maintenance/operations managers and personnel would be trained in fire prevention and emergency response. Fire suppression equipment specific to construction would be maintained on-site. Additionally, project construction and maintenance/operations would comply with applicable existing state and local codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials to minimize the potential for such activities to cause a wildfire event or to induce the spread of wildfire.

The project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.14-1KC would be required (see Section 4.14, *Transportation*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measure MM 4.14-1CC would be required (see Section 4.14, *Transportation*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With the implementation of Mitigation Measure MM 4.14-1KC, impacts would be less than significant.

City of California City

With the implementation of Mitigation Measure MM 4.14-1CC, impacts would be less than significant.

Impact 4.17-2: The project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.

Slope and wind speed can influence the rate at which wildfire spreads. As described previously, the project site has low topographic relief and is relatively flat. It is therefore not anticipated that the project would expose occupants to the uncontrolled spread of a wildfire due to slope.

The site is located in an area where blowing winds may occur. Such winds may have the potential to contribute to the uncontrolled spread of wildfire, as well as carrying pollutant concentrations from a wildfire occurring within the surrounding area to the site where project occupants may be exposed. Prevailing winds originate from the west and southwest, and in these directions, the landscape is mostly undeveloped with exception of the railroad, several existing roadways, portions of the Eland Solar project, California City, and the California City airport. Such physical conditions do not represent a potential source of substantial air pollution during a wildfire event (i.e., no industrial-type uses that may release hazardous pollutants if a fire occurred). Additionally, such lands to the west and southwest are classified as LRA Moderate, similar to the project site, and the potential for wildfire risk is not considered to be high (CalFire 2007b).

Further, it is anticipated that any employees occupying the site, during construction or operations, would be rapidly evacuated at the time of the event, and/or evacuated well in advance of an approaching wildfire, in conformance with applicable County or City evacuation directives put in place. Such measures would ensure that the exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire from prevailing winds would be minimized to the extent feasible.

As discussed in Section 4.13, *Public Services*, Mitigation Measures MM 4.13-1KC and MM 4.13-1CC will require that the project proponent/operator develop and implement a Fire Safety Plan that identifies notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code for use during project construction, operation, and decommissioning. As required

by this Fire Safety Plan, project construction and maintenance personnel would be trained and equipped to extinguish small fires on-site, thus reducing the potential risk of damage from and/or spread of wildfire on-site. Given the moderate potential for fire to occur on the affected parcels, the generally flat topography of the site, and implementation of Mitigation Measures MM 4.13-1KC and MM 4.13-1CC, the project is not anticipated to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds, and other factors. Impacts would be less than significant.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.13-1KC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measure MM 4.13-1CC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.13-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.13-1CC, impacts would be less than significant.

Impact 4.17-3: 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 includes the construction of an overhead and underground collection system, solar panel arrays, one or more O&M facilities, an energy storage system, inverter station, substation(s), and access roads. From the proposed project's substation(s), power would be transmitted to Los Angeles Department of Water and Power's Barren Ridge Substation. Various flammable materials may be stored on-site during construction and operations and some components would be electrified [i.e., substation(s), collector lines, gen-tie line]. Additionally, the project includes onsite energy storage (batteries) which contain flammable chemicals that would be fully contained within the battery storage components.

New internal roadways would be constructed to serve as access roads from the existing off-site road network to the solar array blocks. All roadway improvements would be constructed in conformance with County and City of California City engineering design requirements and regulations, and would not include any flammable materials. These roads would be cleared and compacted for equipment and emergency vehicle travel and access to the solar blocks. These access roads would remain in place and be maintained over the long term to support ongoing project operations and maintenance activities after construction is completed.

Common sources of fires within the desert environment are most often lightning strikes or vehicle exhausts. With regard to the proposed project, there is the potential for lightning to hit the collection system or energy storage facility, potentially causing a wildfire. The use of vehicles during project construction or operation may also increase fire risk due to the driving of heated mufflers and possibly scraping of loose metal pieces over vegetated areas, which could cause a spark. Such conditions may result in a slight increase in the risk of wildfire ignition.

As discussed in Section 4.13, *Public Services*, Mitigation Measures MM 4.13-1KC and MM 4.13-1CC would require the project proponent/operator to develop and implement a Fire Safety Plan that identifies notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code for implementation during project construction, operation, and decommissioning. As stated in Mitigation Measures MM 4.13-1KC and MM 4.13-1CC, the Fire Safety Plan will include, but not be limited to, such measures as requiring that all internal combustion engines, both stationary and mobile, be equipped with spark arresters; maintaining spark arresters in good working order; limiting use of light trucks and cars with factory-installed (type) mufflers only on roads where the roadway has been cleared of vegetation; and restricting the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. Implementation of this plan would ensure that potential impacts related to installation or maintenance of project infrastructure are minimized and, thus, impacts would be less than 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 CBC, 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. The Fire Safety Plan, as discussed above, would also address potential fire hazards for the various components of the project, including the energy storage system, and would include measures for fire suppression and extinguishment techniques if a fire were to occur. Implementation of this plan would ensure that potential impacts related to installation or maintenance of associated infrastructure associated with the energy storage system are reduced to less than significant.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.13-1KC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measure MM 4.13-1CC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

With implementation of Mitigation Measure MM 4.13-1KC, impacts would be less than significant.

City of California City

With implementation of Mitigation Measure MM 4.13-1CC, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope considered for wildfire impacts is the Fremont Valley, which includes the western edge of the Mojave Desert, where the proposed project is located. This geographic scope was selected because the land within the region possesses relatively similar features, including sparse desert vegetation, rural access roads, scattered rural residences, and mining, wind, and solar energy uses. Refer to Chapter 3, *Project Description*, and Table 3-3, *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.

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects would be required to demonstrate the provision of adequate emergency access in accordance with County Fire Code and CBC requirements and prior to the issuance of a building permit. As concluded in the discussion of project impacts above, the project would have a less than significant impact related to impairment of an adopted emergency response or evacuation plan. However, given the project's location in a rural area and limited infrastructure, the project, in combination with the related projects, would have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan because such projects may have the potential to result in minor temporary traffic delays during construction when equipment and building materials are transported or when off-site improvements for access or other components are required. For these reasons, the project is considered to contribute to a significant and unavoidable cumulative impact in this regard.

Other pending projects located within a SRA and/or FHSZ would have an increased potential for the occurrence or spread of wildfire, thereby contributing to wildfire hazards in the area. Similar to the proposed project, all related projects would be required to implement a Fire Safety Plan (as required by Mitigation Measures MM 4.13-1KC and MM 4.13-1CC for the proposed project) as well as building and landscape design features in accordance with the County Fire Code and CBC to reduce potential wildfire risk and exposure of occupants to pollutant concentrations from wildfire that may be exacerbated by existing conditions such as exposure to prevailing winds. Adherence to the County Fire Code and CBC requirements would minimize potential impacts related to the uncontrolled spread of a wildfire. As concluded in the discussion of project impacts above, the project would have a less than significant impact related to the exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. However, given the locations of the cumulative projects considered within a rural area with limited available infrastructure, combined with the fact that certain cumulative projects in the study area may have a greater risk of wildfire due to on-site conditions such as slopes or exposure to prevailing winds, the project and related projects are considered to have the potential to result in a significant cumulative impact related to the 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. Such projects would be reviewed by Kern County, and possibly the City of California City or other such agencies depending on each project's location, during the discretionary process relative to land use and zoning consistency and compliance with applicable requirements, and potentially analyzed for environmental impacts. The placement of any infrastructure associated with these projects would occur in conformance

with applicable fire codes to minimize the potential fire risk through siting and design. The proposed project includes the construction of an overhead and underground collection system, solar panel arrays, an O&M facility, an energy storage system, inverter station, substation(s), and access roads. While the potential for wildfire to occur on-site or on another pending project site is considered moderate, such components may have the potential to exacerbate fire risk or may result in impacts on the environment if damaged during a wildfire. Mitigation Measures MM 4.13-1KC and MM 4.13-1CC would be implemented to require preparation of a Fire Safety Plan that identifies notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code for use during project construction, operation, and decommissioning. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects would have the potential to result in a cumulative impact related to infrastructure improvements that may increase fire risk or result in environmental impacts. As such, the project, in combination with other related projects, could result in a significant and unavoidable cumulative impact in this regard.

Mitigation Measures

Kern County

Implementation of Mitigation Measure MM 4.13-1KC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

City of California City

Implementation of Mitigation Measure MM 4.13-1CC would be required (see Section 4.13, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

Kern County

Even with implementation of Mitigation Measure MM 4.13-1KC, cumulative impacts would remain significant and unavoidable.

City of California City

Even with implementation of Mitigation Measure MM 4.13-1CC, cumulative impacts would remain significant and unavoidable.

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5.1 Environmental Effects Found to Be Less than Significant

Section 15128 of the CEQA Guidelines requires that an EIR “contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.”

Kern County has engaged the public in the scoping of this Environmental Impact Report. 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 a Notice of Preparation/Initial Study (NOP/IS) that was prepared in accordance with the CEQA Guidelines and in consideration of public and agency input received during the scoping process (see Appendix A of this EIR).

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:

- Mineral Resources
- Population and Housing
- Recreation

The NOP/IS determined that the proposed project area does not contain mineral resources of regional or statewide significance, nor is the project site designated by the Kern County General Plan or the State Department of Conservation, Geologic Energy Management Division for mineral resource activities; therefore, the project would not have an impact on mineral resources. Project operations would require up to 20 full-time equivalent (FTE) personnel, which to the extent feasible, may be hired from the local population. Additionally, should project-related employees relocate to the area, the local housing stock would be adequate to accommodate the additional workers. The project would not directly or indirectly induce substantial unplanned population growth and it would not displace any persons or housing as the project site does not presently support any existing residential dwelling units. Additionally, if the 20 FTE personnel were hired from outside of the local area and relocated to eastern Kern County, the addition of any such persons to the area would not result in or cause a substantial increase in the number of users at local public parks or public recreational facilities and would therefore not cause substantial physical deterioration of the County’s recreational facilities. As such, these issues were not further analyzed in this EIR.

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 within incorporation of mitigation measures:

- Agriculture and Forestry Resources
- Cultural Resources

- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

5.2 Significant Environmental Effects that Cannot Be Avoided

Section 15126.2(c) of the CEQA Guidelines requires that an 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/or cumulative impacts in the following areas would be significant and unavoidable. Table 5-1, *Summary of Significant and Unavoidable Impacts Resulting with the Proposed Project*, provides a summary of significant and unavoidable impacts and proposed mitigation measures that would reduce such potential impacts to the extent feasible.

Table 5-1. Summary of Significant and Unavoidable Impacts Resulting with the Proposed 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 4.1-1KC through MM 4.1-7KC and MM 4.1-1CC through MM 4.1-7CC would be incorporated to reduce visual impacts to the extent feasible, which include requirements to provide ongoing site maintenance including trash and debris removal; preserve and enhance scenic vegetation where possible; install visually screening features that would limit the visibility of project features; minimize color contrast through the selection of appropriate paint colors and surface treatments for project facilities; and, limit impacts from the location of tall, intrusive project facilities near public viewing areas. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, the project would substantially degrade the existing visual character and scenic quality of public views of the site and its surroundings, as seen and described from the KOPs, and impacts on visual resources would remain significant and unavoidable despite	The project would result in cumulative significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-7KC and MM 4.1-1CC through MM 4.1-7CC, the project's contribution to significant impacts associated with visual character in the Fremont Valley would be significant and unavoidable.

Table 5-1, Summary of Significant and Unavoidable Impacts Resulting with the Proposed Project, continued

Resources	Project Impacts	Cumulative Impacts
	implementation of Mitigation Measures MM4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM4.1-4CC.	
Air Quality	Despite the implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC, exposure to dust resulting from construction could still occur, increasing the susceptibility to contracting COVID-19 and increasing the severity of the disease. Further, NO _x and PM ₁₀ emissions would be considered cumulatively considerable, despite implementation of mitigation measures. Therefore, impacts in this regard would remain significant and unavoidable.	If construction of the proposed projects in the project’s vicinity overlap, emissions of NO _x and PM ₁₀ would be cumulatively considerable. Even with implementation of Mitigation Measures MM4.3-1KC through MM4.3-7KC and MM 4.3-1CC through MM 4.3-7CC, cumulative temporary construction impacts are considered significant and unavoidable. Additionally, the uncertainty of the project’s regional and localized health impacts associated with criteria air pollutants, such as 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	No project-level impacts to biological resources would be significant and unavoidable.	Given the number of present and reasonably foreseeable future development projects in the Fremont Valley, the project, when combined with these other projects, would have an incremental contribution to the cumulative loss of foraging and nesting habitat for special-status species. While the project would have less than significant impacts on sensitive biological resources with implementation of Mitigation Measures MM 4.1-5KC, MM 4.4-1KC through MM 4.4-23KC and MM 4.1-5CC, MM 4.4-1CC through MM 4.4-22CC at the project level, when combined with related development projects, cumulative impacts would be significant and unavoidable.
Hazards and Hazardous Materials	There would be no significant and unavoidable project impacts.	Given the project’s location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to impairment or interference with an adopted emergency response plan or emergency evacuation plan. Further, the project and related projects would have the potential to result in a cumulative impact from the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. Cumulative impacts in this regard are considered significant and unavoidable.

Table 5-1, Summary of Significant and Unavoidable Impacts Resulting with the Proposed Project, continued

Resources	Project Impacts	Cumulative Impacts
Wildfire	No project-level impacts as a result of wildfires would be significant and unavoidable.	Given the project's location in a rural area and limited infrastructure, the project, in combination with related projects, would have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and to infrastructure improvements that may increase fire risk or result in significant impacts. Given the project's location combined with the fact that certain cumulative projects in the project vicinity may have a greater risk of wildfire, the project and related projects are considered to have the potential to result in a significant cumulative impact related to exposure of project occupants to pollutant concentrations from a wildfire. As such, the project, in combination with other related projects, could result in significant and unavoidable cumulative impacts.

5.3 Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from damage caused by environmental accidents associated with the project. Additionally, 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 and California City General Plan, as a matter of public policy, those commitments have been determined to be acceptable. The Kern County General Plan and California City General Plan ensure that any irreversible environmental changes associated with those commitments would be minimized.

5.4 Growth Inducement

The Kern County General Plan and California City General Plan recognize that certain forms of growth are beneficial, both economically and socially. Section 15126.2(d) of the CEQA Guidelines states the following regarding 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. It is estimated that up to 1,000 workers per day (during peak construction periods) would be required during construction of the proposed project. Construction workers are expected to travel to the site from various local communities within Kern County and locations throughout Southern California, and the number of workers expected to permanently relocate to the surrounding local area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby communities of Mojave, California City, Rosamond, Tehachapi, and Lancaster. Therefore, the project is not anticipated to directly or indirectly induce the development of any new local housing or businesses. During the operational phase, the project would employ up to 20 FTE personnel (or personnel hours totaling 20 FTE positions, i.e., an average of 1,800 personnel hours per week), who would be hired locally or who would commute to the site. Existing housing stock would accommodate operations personnel should they relocate to the area. The proposed project would therefore not result in a large increase in employment that would significantly induce local population growth.

Although the project would contribute to available energy supplies, which support growth, the development of power infrastructure is a response to increased market demand and statewide regulatory mandates, including the Renewable Portfolio Standard mandate, and is not a factor that induces new growth. Kern County planning documents currently permit and anticipate a certain level of growth in the project area, 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 future 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 of Appeals 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, the level of analysis provided in this EIR is adequate to inform the public and decisionmakers of the growth-inducing impacts of the project.

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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 proposed 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 those 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 proposed project has the potential to result in significant adverse effects, after the implementation of mitigation measures, related to the following topics:

- Aesthetics (project and cumulative)
- Air quality (project and cumulative)
- Biological resources (cumulative only)
- Hazards and hazardous materials (cumulative only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4 of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the CEQA *Guidelines*, this section discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the project are discussed below.

Aesthetics

As discussed in Section 4.1, *Aesthetics*, implementation of the proposed project would result in potentially significant visual impacts to the existing visual quality and character of the site and surrounding area. When introduced into the project viewshed, the industrial nature of the project would substantially change the existing visual character of the landscape as viewed from sensitive receptors for the life of the project. The project facilities would add cultural modifications to the project site's landscape from certain viewpoints. Operation of a solar power generation facility of this size would introduce new infrastructure and other anthropogenic features; alter the existing visual character of the landscape from one that is rural and undeveloped in nature to industrial; be seen by viewers of moderate to high sensitivity; and reduce existing scenic quality through the intrusion of human-made elements on land that is currently largely undeveloped. Portions of the project site would be setback from major viewing areas; however, the project would remain visible to varying degrees, such as from SR 14, Philips Road, and the unincorporated community of Fremont. Mitigation Measures MM 4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM 4.1-4CC (see Section 4.1, *Aesthetics*, for full mitigation measure text) would be incorporated to reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, providing privacy fencing, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. Furthermore, the color treatment of buildings (O&M facilities, energy storage systems (ESS), etc.) would help these components to better blend in with the natural landscape. Nevertheless, even with implementation of these aforementioned mitigation measures, project level impacts on visual character and quality would remain significant and unavoidable. The project would result in less than significant impacts related to light and glare with the implementation of Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC.

Additionally, while related projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar energy production uses cannot be mitigated to a degree that impacts are no longer significant. Therefore, even with implementation of Mitigation Measures MM 4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM 4.1-4CC, the project's contribution to impacts on visual character and quality in the Fremont Valley

would be cumulatively significant and unavoidable. The project would not result in cumulatively considerable impacts associated with any of the other impact criteria for aesthetics after mitigation.

Air Quality

With project implementation, long-term increases in operational emissions of primary concern within the region (i.e., ROG, NO_x, CO, SO_x, and PM₁₀, and PM_{2.5}) would be minimal and would not exceed applicable significance thresholds. However, construction and decommissioning of the project would result in temporary increases of PM₁₀ that would exceed Eastern Kern Air Pollution Control District's (EKAPCD) significance thresholds. Mitigation Measures MM 4.3-1KC and MM 4.3-1CC (see Section 4.3, *Air Quality*, for full mitigation measure text) would be required implementation of dust control measures, following EKAPCD standards and permitting requirements, development of a decommissioning plan, best practices for fugitive dust management in order to reduce PM₁₀ emissions throughout construction and decommissioning and ensure the emission levels do not exceed EKAPCD's significance thresholds. In addition, Mitigation Measures MM 4.3-2KC through MM 4.3-4KC and MM 4.3-2CC through MM 4.3-4CC, would be implemented to further reduce construction emissions. The project's impacts related to conflicts with applicable air quality plans and standards would be less than significant with mitigation.

While the studies included in the appendices identify the closest sensitive receptors to the project site as residences ranging from 0.22 to 0.63 miles away, County Staff has reviewed the area and identified four (4) structures in the vicinity (within a distance of approximately 1,300 feet) of the unincorporated Kern County portion of the project site that could be considered sensitive receptors, as discussed in Section 4.13, *Noise*. To ensure there are no significant impacts related to potential for exposing sensitive receptors to pollutant concentrations, mitigation measures would be implemented to minimize project emissions and health-related effects, including Mitigation Measures MM 4.3-1KC through MM 4.3-3KC and MM 4.3-1CC through MM 4.3-3CC (reduced construction emissions). Implementation of Mitigation Measures MM 4.3-1KC, MM 4.3-1CC, MM 4.3-5KC and MM 4.3-5CC would also be required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints. As such, the impacts are conservatively considered to be significant and unavoidable.

During project construction, it is possible that surrounding residents and on-site workers could be exposed to Valley Fever as fugitive dust is generated during construction even though dust minimizing techniques would be employed and dust reduction measures would be implemented (as described in Mitigation Measures MM 4.3-1KC and MM 4.3-1CC). The project would be required to implement Mitigation Measures MM 4.3-6KC, MM 4.3-6CC, MM 4.3-7KC, and MM 4.3-7CC to reduce risks pertaining to Valley Fever. Mitigation Measures MM 4.3-6KC and MM 4.3-6CC would provide training and personal protective respiratory equipment to construction workers and provide information to all construction personnel and visitors about Valley Fever. Mitigation Measures MM 4.3-7KC and MM 4.3-7CC would require a one-time fee paid to the Kern County Public Health Services Department for Valley Fever public awareness programs. With the implementation of these mitigation measures, dust from the construction of the proposed project would not add significantly to the existing exposure level of people, including construction workers, and impacts would be reduced to less than significant levels.

The project would result in potentially significant cumulative impacts associated with construction emissions and COVID-19. Mitigation Measures MM 4.3-1KC through MM 4.3-7KC and MM 4.3-1CC through MM 4.3-7CC would be implemented to reduce impacts; however, cumulative impacts could remain

significant and unavoidable related to NO_x and PM₁₀ emissions as well as criteria air pollutants with indirect linkages to COVID-19 issues.

Biological Resources

The project site and the surrounding area provides suitable habitat for several rare, special-status, or otherwise protected plant and wildlife species (broadly referred as special-status species). Several of these species were identified within or in close proximity to the project site during biological surveys (see Section 4.4, *Biological Resources*, for details). The project has the potential to result in significant impacts on biological resources, including Joshua trees, Barstow woolly sunflowers, silver cholla, and other special-status plants; burrowing owl and other raptors, Mohave ground squirrel, American badger, desert tortoise, desert kit fox, and migratory birds. The types of significant impacts include causing direct or indirect effects during construction, operation, and decommissioning; causing the fragmentation or loss of habitat; and, interfering with movement and migratory behavior. The project could also result in potentially significant impacts on sensitive habitats or other natural communities, including “Creosote Bush – White Bursage – Desert Senna Scrub” vegetation community, silver cholla, and Joshua tree, as well as potentially jurisdictional water features. Further, the project could conflict with local and regional policies for protecting western Joshua tree and other native desert plants, including those identified in the Kern County General Plan, California City General Plan, and Desert Renewable Energy Conservation Plan.

Impacts of the proposed alone would be reduced to less than significant levels with implementation of biological Mitigation Measures MM 4.4-1KC through MM 4.4-23KC and MM 4.4-1CC through MM 4.4-21CC, as well as Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC (see Section 4.1, *Aesthetics*). However, even with these mitigation measures, the proposed project would have cumulative considerable impacts on biological resources in the Fremont Valley area when taken into account with other current and foreseeable projects, due to the cumulative loss of habitat to special-status and transient wildlife species, including desert tortoise, Mohave ground squirrel, migratory birds, American badger, and desert kit fox. The cumulative impacts of the proposed project would be significant and unavoidable.

Hazards and Hazardous Materials

The proposed project by itself would have either less than significant impacts or less than significant impacts with mitigation related to hazards and hazardous materials. These impacts include impacts from the transport, use, and disposal of hazardous materials; potential for the release of a hazardous materials; impair or interfere with an adopted emergency response or evacuation plan; or loss, injury, or death involving wildland fires. Potentially significant impacts of the project would be reduced to less than significant levels with implementation of Mitigation Measures MM 4.1-6KC, MM 4.1-7KC, MM 4.1-6CC, and MM 4.1-7CC (see Section 4.1, *Aesthetics*); MM 4.9-1KC through MM 4.9-3KC, and MM 4.9-1CC through MM 4.9-3CC; MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*); and MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*).

While the proposed project by itself would not result in significant impacts after mitigation, it was determined that the project could have cumulatively considerable impacts. The proposed project combined with other cumulative project impacts has the potential to exacerbate wildfire risks, due to the rural nature and limited infrastructure where the project site is located. Consistent with the findings for wildfire impacts, the proposed project with other cumulative project impacts also has the potential to expose people or

structures to a significant risk of loss, injury, or death involving wildland fires, due to the rural nature and limited infrastructure where the project site is located. Similarly, cumulative impacts involving wildland fire hazards would remain significant and unavoidable with this alternative, even after implementation of Mitigation Measures MM 4.9-1KC through MM 4.9-3KC, and MM 4.9-1CC through MM 4.9-3CC; MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*); and MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*).

Wildfire

The proposed project site is located within a rural, sparsely developed area with limited existing infrastructure. The area contains low desert vegetation typical of the Mojave Desert. Wildland fires in such desert environments are generally infrequent and of low severity because the fuel loads are incapable of sustaining fire. No recorded wildfires have burned across the project site, and neither the proposed solar field or gen-tie line are located in or near State Responsibility Areas or lands classified as “very high” Fire Hazards Severity Zones, which are the primary indicators for elevated fire risks that require detailed impact analysis according to Appendix G of the CEQA *Guidelines*. To ensure the proposed project would not substantially impair an adopted emergency response or evacuation plan, Mitigation Measures MM 4.14-1KC and MM 4.14-1CC (see Section 4.14, *Traffic and Transportation*) would be implemented during construction which requires the project to obtain the necessary traffic permits and approvals and to follow proper traffic control procedures. Construction and operation of the project would pose minor risks of causing or exacerbating the uncontrolled spread of wildfire and adverse post fire conditions. The associated impacts would all be less than significant with implementation of Mitigation Measure MM 4.13-1KC and MM 4.13-1CC (development and implementation of a Fire Safety Plan; see Section 4.13, *Public Services*).

Although impacts of the proposed project by itself would be less than significant with mitigation proposed, the project would have cumulatively considerable impacts related to wildfire due to the rural nature of the project region and the numerous other projects in the area. The proposed project, in conjunction with other current and foreseeable projects, would result in significant cumulative impacts related to wildfire, including potential conflicts with an adopted emergency response or evacuation plan; exposure of people to pollutant concentrations from a wildfire; and the installation or maintenance of associated infrastructure that may exacerbate fire risk. Cumulative impacts would be significant and unavoidable.

6.2 Project Objectives

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA *Guidelines*, Section 15126.6(c)). As described in Chapter 3, *Project Description*, of this EIR the following objectives have been established for the project and will aid decision makers in the review of the project and associated environmental impacts.

- Construct and operate a solar energy facility capable of producing up to 500 MW of electricity and up to 600 MWh of energy storage to assist the State of California in achieving its 50 percent renewable portfolio standard by 2030.
- Provide renewable energy to the electric grid to meet increasing demand for in-state generation.

- Integrate operating facilities with other existing solar projects in the vicinity to maximize economies of scale.
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County.
- Work toward California City’s goal of encouraging commercial, industrial and government (public facilities) entities to create sustainable employment through jobs paying higher wages in compliance with the environmental standards for the City and the region.
- Site and design the project is an environmentally responsible manner consistent with current Kern County and City of California City guidelines.
- Promote economic development and bring living-wage jobs to the region throughout the life of the proposed project.

6.3 Overview of the Proposed Project

The proposed project would develop a photovoltaic (PV) solar facility and energy storage system capable of producing up to 500 megawatts (MW) of alternating current (AC) power and 600 megawatt hours (MWh) of energy storage capacity on approximately 1,955 acres of privately-owned land. The project would include a 230 kilovolt (kV) overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power’s Barren Ridge Substation. 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), inverter stations, and operations and maintenance (O&M) facilities. Refer to Figure 3-13, *Overall Site Plan*, and Figures 3-4B to 3-4F, *Plan View (Sites 1 to 5)*, in Chapter 3, *Project Description*.

The proposed project consists of the following requests:

- Kern County
 - Zone Change Case No. 14, Map No. 152 as follows:
 - From A-1 (Limited Agriculture) to A (Exclusive Agriculture) for approximately 164.76 acres;
 - From A-1 MH (Limited Agriculture, Mobile Home Combining) to A for approximately 2.39 acres;
 - From PL RS (Platted Lands, Residential Suburban Combining) to A for approximately 10.29 acres; and
 - From PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining) to A for approximately 7.73 acres.
 - Issuance of Conditional Use Permit (CUP) No. 28, Map No. 152 to allow for the construction and operation , within the A (Exclusive Agriculture) pursuant to Section

19.12.030G of the Kern County Zoning Ordinance, of a 673.60-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of alternating current power and 600 MW hours of storage capacity within the A (Exclusive Agriculture) pursuant to Section 19.12.030G of the Kern County Zoning Ordinance.

- General Plan Amendment No. 10, Map No. 152 to the Circulation Element of the Kern County General Plan to remove road reservations on section and mid-section lines within the Kern County project boundaries.
- Non-summary Vacation, Map No. 152 to remove public access easements.
- City of California City (Responsible Agency)

The City of California City is a Responsible Agency under CEQA. For the parcels within the limits of the City of California City, the City will require the project proponent to obtain a CUP from the City to allow for the construction and operation of a solar facility, in the O/RA (Open Space/Residential Agricultural) zone (CUP 19-04), of a 1,281.53-acre PV solar facility with a total project generating capacity, in both Kern County and California City, of up to 500 MW of AC power and 600 MWh of energy storage capacity (CUP 19-04). At present, solar facilities are considered to be a permitted use only in industrial zoned areas in California City.. The project proponent has requested to remove the future section and mid-section lines for the portion of the project within the City of California City's jurisdiction. The City will determine during the CUP process (Sec. 9-2-2501 of the California City Municipal Code) what section lines will be required to be preserved and what ones will be removed.

See Chapter 3, *Project Description*, of this EIR, for a detailed project description.

6.4 Overview of Alternatives to the Proposed Project

Under CEQA, and as indicated in California Public Resources Code (PRC) Section 21002.1(a), the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process and is required to ensure the consideration of ways to mitigate or avoid the significant environmental effects of a project. The objectives established for the project and the feasibility of the alternatives considered are evaluated in this chapter and summarized in Table 6-1, *Summary of Proposed Project and Development Alternatives*. The following alternatives were evaluated, which are described in the sections below:

- Alternative 1: No Project Alternative (required by CEQA)
- Alternative 2: General 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

Alternatives that were considered but rejected are discussed in Section 6.5, *Alternatives Considered and Rejected*. The Environmentally Superior Alternative is described in Section 6.8, *Environmentally Superior Alternative*, as required by CEQA. Table 6-1, *Summary of Proposed Project and Development Alternatives*, provides a summary description, basis for analysis, and applicable feasibility of each development alternative. A complete discussion of each alternative is also provided below.

Table 6-1. Summary of Proposed Project and Development Alternatives

Alternative	Description	Basis for Selection and Summary of Analysis
Proposed Project	Construction and operation of a solar facility on approximately 1,955 acres would generate up to 500 MW of AC power and up to 600 MWh of energy storage capacity. The project would include a 230 kV overhead and/or underground gen-tie line(s) originating from one or more on-site substations and terminating at the Los Angeles Department of Water and Power’s Barren Ridge Substation. Approval of the project would require one County general plan amendment (Circulation Element), one zone change request, one conditional use permit, non-summary vacations of public easements from Kern County, and one conditional use permit from the City of California City.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA. • Avoids the need for general plan amendments, zone change cases, conditional use permits, and non-summary vacations from Kern County. • Avoids the need for a conditional use permit from the City of California City. • Avoids all significant and unavoidable impacts. • Would not offset greenhouse gas (GHG) emissions from nonrenewable energy generation, thus greater impacts on GHG emissions. • Less impact in all remaining environmental issue areas. • Does not meet any of the project objectives.
Alternative 2: General Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the existing Kern County General Plan and City of California City General Plan land use designations, zoning classifications, and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids the need for general plan amendments, zone change cases, and conditional use permits from Kern County. • Avoids the need for a conditional use permit from the City of California City. • Reduces impacts on aesthetics, agriculture and forestry resources, and wildfire. • Similar impacts on hazards and hazardous materials. • No impacts on land use and planning. • Greater overall impacts in all remaining environmental issue areas. • Does not meet any project objectives.

Table 6 1. Summary of Proposed Project and Development Alternatives, continued

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of multiple solar facilities on a portion of the project site on approximately 937 acres. This alternative is expected to contain enough land to construct a solar array field capable of generating approximately 240 MW of AC power, with up to approximately 288 MWh of energy storage. As with the proposed project, this alternative would also require General Plan amendments, zone change cases, conditional use permits, and non-summary vacations of public access easements from Kern County and a conditional use permit from the City of California City.	<ul style="list-style-type: none"> • Reduces, but results in similar impacts on aesthetics, air quality, biological resources, hazards and hazardous materials, land use and planning, noise, and public services. • Reduces impacts in all remaining environmental issue areas. • Reduces benefit of offsetting GHG emissions from nonrenewable energy generation, thus greater GHG emissions impact. • Does not meet all the project objectives.
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 500 MW of PV solar generating facilities distributed on rooftops throughout the Fremont and Antelope Valley areas. Electricity generated would be for on-site use only. No centralized energy storage systems would be included.	<ul style="list-style-type: none"> • Avoids the need for general plan amendments and zone changes the project site, but may require other entitlements on the site, such as a CUP or variance. • Avoids significant and unavoidable impacts associated with aesthetics, air quality, biological resources, and hazards. • Reduces benefit of offsetting GHG emissions from nonrenewable energy generation by utility purveyors. • No impacts on land use and planning. • Similar impacts on energy. • Reduced impacts on all remaining issue areas. • Does not meet all the project objectives nor does it account for the energy storage component of the project.

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 or denying a project altogether. Accordingly, Alternative 1 assumes that development of the up to 500 MW PV solar facility with up to 600 MWh energy storage capacity on the approximately 1,955-acre site would not occur. The No Project Alternative would not require general plan amendments, zone change cases, conditional use permits, or non-summary vacations of public access easements from Kern County, or a conditional use permit from California City for construction and operation of the proposed solar and energy storage project. The No Project Alternative would maintain the current zoning classifications, land use designations, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

6.4.2 Alternative 2: General Plan and Zoning Build-Out Alternative

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing Kern County General Plan and Zoning Ordinance and the City of California City’s General Plan and Zoning Ordinance in which the project is located. No project-related solar facilities would be developed under this alternative and, therefore, no zone changes for solar facility construction and operation would be required. A summary of these designations for the project

site is provided below. A detailed description of the designations that apply to specific properties of the project or summaries by quadrant are provided in Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning, and Acreage*, and Table 3-2, *Existing On- and Off-site Land Use, General Plan Map Code Designations, and Zoning*, provided in Chapter 3, *Project Description*.

- **Kern County – General Plan**
 - 5.6 (Interim Rural Community, Min. 2.5 Gross Acres/Unit)
 - 8.5 (Resource Management, Min. 20-acre Parcel Size)
- **Kern County – Zoning Ordinance**
 - A (Exclusive Agriculture)
 - A-1 (Limited Agriculture)
 - A-1 MH (Limited Agriculture, Mobile Home Combining)
 - PL RS (Platted Lands, Residential Suburban Combining)
 - PL RS MH (Platted Lands, Residential Suburban Combining, Mobile Home Combining)
- **California City – General Plan**
 - O/RA (Controlled Development & Open Space)
- **California City – Zoning Ordinance**
 - O/RA (Open Space/Residential/Agricultural)

6.4.3 Alternative 3: Reduced Acreage Alternative

Alternative 3 would involve a reduced footprint of the total area proposed where solar development would occur, including the installation of solar panels, collector lines, transformers, substations, energy storage facilities, access roads, and O&M facilities. The purpose of the Reduced Acreage Alternative is to avoid or minimize adverse effects associated with the project's proximity to sensitive receptors, vegetation removal, ground disturbance, construction air emissions, and the extent project facilities would be visible from sensitive viewing locations. Reducing acreage of the project to achieve these goals can be achieved through a number of different footprint configurations. While a portion of the proposed project's environmental resource conditions and impacts are consolidated or based on the presence of fixed features (i.e., receptor locations), others are not consolidated (i.e., biological resources) in a manner that clearly indicates which portions of the project site could be eliminated to reduce the project's environmental effects across all parameters to the greatest extent possible. The Reduced Acreage Alternative targets an overall reduction of the project footprint by roughly 48 percent, which is intended to reduce impacts associated with project development roughly proportionally. A hypothetical reduced footprint configuration was developed for the Reduced Acreage Alternative that meets this reduction target, as discussed below; however, the County, acting within its role as CEQA lead agency when making its decision to approve or deny the project, may determine that a different footprint configuration would be more appropriate at reducing the project impacts.

This could be based on considerations of operational feasibility and/or effectiveness, giving more weight to certain environmental objectives versus others, or possibly other considerations.

Under Alternative 3, the hypothetical footprint configuration for the Reduced Acreage Alternative, involves eliminating Sites 1, 3, 4, and 5 (1,018 acres), and retaining Site 2 (937 acres) for the development of a solar facility containing the same components as described for the proposed project (see Figure 6-1, *Reduced Acreage Alternative*). Eliminating Sites 1, 3, 4, and 5 would reduce the overall area where special-status species occurrences and suitable habitat was documented by roughly half when compared to the proposed project. Similarly, dust and equipment emissions would also be reduced by roughly half. The project and its associated impacts would also be consolidated to a single general area and adjacent to the California City Municipal Airport, opposed to dispersing them across a larger area, multiple sites, and in areas that are not adjacent to existing development. The Reduced Acreage Alternative would reduce the need for land use and zoning changes in both Kern County and the City of California City; however, the remaining portion of the project (Site 2) would still be located within Kern County and the City of California City. Therefore, land use and zoning changes would still be required for both jurisdictions. This alternative would also reduce impacts on aesthetics, hazards and hazardous materials, and wildfire due to the reduced area of disturbance, as compared to the project as proposed.

Based on the reduced area, the power generation would be reduced from approximately 500 MW to 240 MW, and energy storage capacities would be reduced roughly from approximately 600 MWh to 288 MWh. It is assumed that the same gen-tie alignment identified for the proposed project would be used for the Reduced Acreage Alternative (see Figure 6-1, *Reduced Acreage Alternative*). Similar to the proposed project, this alternative would also require the aforementioned amendment to the County General Plan Circulation Element, zone case changes, conditional use permits, and non-summary vacations of public access easement 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 On-site Solar Only

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop On-site Solar Only, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kWh to 1 MW) within existing developed areas, typically on the rooftops and/or already disturbed parking lots of commercial and industrial facilities situated throughout Fremont Valley. 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 1,955 acres of total rooftop area) may be required to attain a similar generating capacity of 500 MW as compared to the proposed project. Because of space or capital cost constraints, many rooftop or ground-level 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 500 MW of power, but it would be for on-site use only. This alternative assumes that rooftop or parking area development would occur primarily on commercial and/or industrial structures and associated parking areas, due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative

would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on-site by the commercial or industrial facility without requiring the construction of new energy storage systems, electrical substations, or transmission facilities.

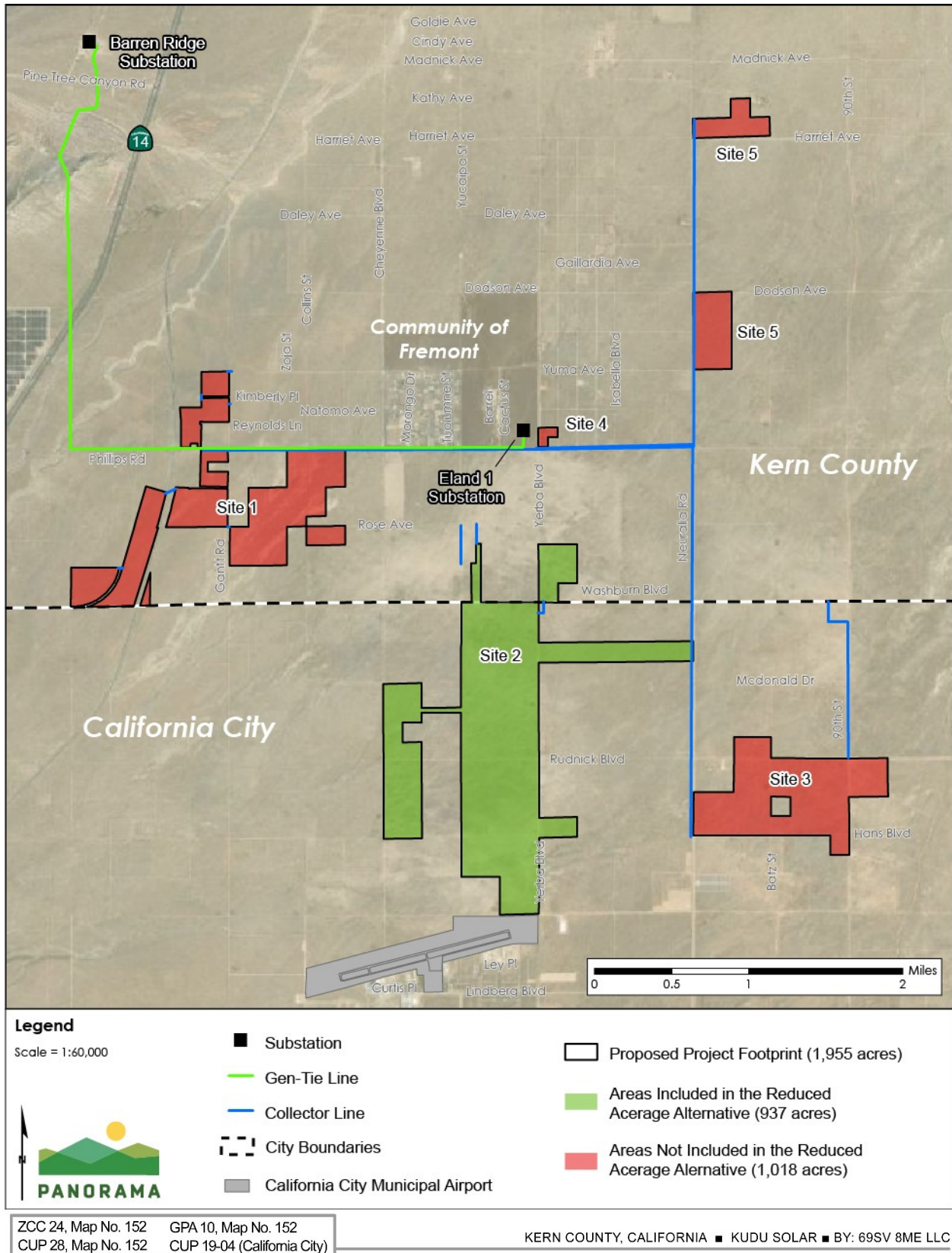


Figure 6-1 Reduced Acreage Alternative

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 on aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), hazards and hazardous materials (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

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 to 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 500 MW of power that the proposed 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.

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, low maintenance, and 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 proposed project because wind turbines would be taller than solar panels, require Federal Aviation Administration (FAA) lighting, and are more visible from many public viewpoints.
- It may conflict with operations at the California City Municipal Airport, Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan, and/or the Edwards Air Force Base due to the heights of the turbines.
- It may result in additional/greater biological resources impacts to avian species (i.e., bird strikes) than the proposed project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.

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) increased 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 manner 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 including 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 may conflict with operations at the California City Municipal Airport, Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan, and the Edwards Air Force Base due to the heights of the cooling towers and/or smokestacks.
- It would not contribute to the statewide renewable energy and GHG emission reduction objectives, as this alternative would use nonrenewable energy to produce electricity.

6.5.3 Alternative Site

This alternative would involve development of the project on an alternative 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 Fremont Valley, similar to the proposed project. This alternative is assumed to involve construction of a 500 MW PV solar facility with up to 600 MWh of energy storage on a site totaling 1,955 acres. CEQA *Guidelines* Section 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the project.

Fremont Valley 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 Fremont Valley, alternative project sites in the area are likely to have similar project and cumulatively significant impacts after mitigation, including cumulatively significant impacts to aesthetics, air quality, biological resources, hazards, and wildfire. 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 proposed project.

6.6 Analysis Format

In accordance with CEQA *Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR, would be mostly attained by the alternative. The project’s impacts that form the basis of comparison in the alternatives analysis are those impacts which represent a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below.

- a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.

- b) Post-mitigation significant and less than significant environmental impacts of the alternative and the proposed 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 proposed 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 proposed project, the comparative impact is said to be “greater.”
 - Similar: Where the impacts of the alternative after feasible mitigation and the proposed 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 Project Alternatives*, provides a summary and side-by-side comparison of the proposed project with the impacts of each of the alternatives analyzed. Note that in Alternatives 1 through 4 in Table 6-2, the references to “less, similar, or greater,” note the impact of the project alternative as compared to the proposed project. References to “no impact (NI), less than significant (LTS), or significant and unavoidable (SU)” refer to the significant impact resulting with the specific alternative being considered.

Table 6-2. Comparison of Project Alternatives

CEQA Issue Topic	Proposed Project Impacts	Alternative 1: No Project Alternative	Alternative 2: General Plan, and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility- Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (SU)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Less than significant with mitigation	Less (NI)	Less (NI)	Less (LTS)	Less (NI)
Air Quality	Significant and unavoidable (project and cumulative)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (NI)
Cultural Resources	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Energy	Less than significant	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)
Hazards and Hazardous Materials	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than significant (project) Less than significant with mitigation (cumulative)	Less (NI)	Less (NI)	Similar (LTS)	Less (NI)
Noise	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Greater (SU)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)

Table 6-2. Comparison of Project Alternatives, continued

CEQA Issue Topic	Proposed Project Impacts	Alternative 1: No Project Alternative	Alternative 2: General Plan, and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility- Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Tribal Cultural Resources	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (NI)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfire	Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	None	None	Some
<p>Notes:</p> <p>^a It was determined in the IS/NOP that no impacts would occur from project implementation with regard to the Mineral Resources, Recreation, and Population and Housing resource areas, and therefore, no further analysis was required in the EIR.</p> <p>NI = No impact LTS = Less than significant SU = Significant and unavoidable</p>					

6.7 Impact Analysis

6.7.1 Alternative 1: No Project Alternative

Environmental Impact Analysis

Aesthetics

Under the No Project Alternative, no development would occur on the project site. The project site would remain in its current state as undeveloped land and no change to the existing scenic quality, visual character, or glare conditions on the site would occur. Impacts to scenic resources and daytime and nighttime views in the area would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impact to aesthetics compared to the proposed project.

Agriculture and Forestry Resources

Under the No Project Alternative, the project site would remain undeveloped and solar panels and an energy storage system would not be installed. The project site would remain in its current state, as largely undeveloped desert land. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland or forest land to non-agricultural or non-forest uses. 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 proposed project.

Air Quality

Under the No Project Alternative, the project site would remain undeveloped and there would be no construction activities or operational activities that would generate air emissions. The project would not exceed the EKAPCD's significance thresholds for PM₁₀ and PM_{2.5}, conflict with the attainment standard, or 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 proposed project.

Biological Resources

Under the No Project Alternative, the project site would remain undeveloped and existing biological resources on the project site would remain undisturbed since no construction or operation would occur, including Joshua trees, Barstow wooly spinescale, silver cholla, sensitive natural plant communities, and other special-status plants; burrowing owl and other raptors, Mohave ground squirrel, American badger, desert tortoise, desert kit fox, and migratory birds; and potentially jurisdictional water features. The project site would remain in its current state, as undeveloped land containing the same existing habitat conditions, and would not contribute to a cumulative loss of habitat for species that occupy the area. 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. Therefore, disturbance to potential historical resources, archeological resources, or human remains located on-site would not occur and this alternative would not require mitigation. There would be no impact and the No Project Alternative would result in less impacts related to cultural resource compared to the proposed project.

Energy

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. However, it should be noted that the No Project Alternative would not support the goals of the Renewable Portfolio Standard. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the proposed project.

Geology and Soils

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, 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 landslides, be located on expansive soil; 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 impact related to geology and soils compared to the proposed project.

Greenhouse Gas Emissions

Under the No Project Alternative, emissions associated with construction and operation of a solar energy facility and energy storage system 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 greenhouse gas emissions. However, the potential offset of GHG emissions resulting from operation of the solar power generating facility would not be realized. Impacts would be less than significant under this alternative; however, cumulative impacts from implementation of this alternative would be greater than those of the project as it would not offset GHG emissions that would occur through nonrenewable energy generation.

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 emissions or handling hazardous materials within 0.25 miles of an existing or proposed school; create a significant hazard to the public or environment; result in a safety hazard or excessive noise for

people residing or working in the project area for a project located within the vicinity of a private airstrip; impair implementation of or interfere with an adopted emergency response plan or emergency evacuation plan; expose people or structures to significant risk of loss, injury, or death involving wildland fires; or generate vectors or have a component that includes agricultural waste. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to hazards and hazardous materials compared to the proposed project.

Hydrology and Water Quality

Under the No Project Alternative, the project site's existing hydrology and water quality would remain unchanged as no development or ground disturbance would occur on the subject site. As such, this alternative would not: contribute to the depletion of available water sources; violate water quality standards or waste discharge requirements; substantially alter the existing drainage patterns of the site or area in a manner that would result in substantial erosion and/or sedimentation on-site or off-site, result in flooding on-site or off-site; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system; or impede or redirect flood flows. Therefore, there would be no impact and the No Project Alternative would result in less impact related to hydrology and water quality compared to the proposed project.

Land Use and Planning

The No Project Alternative would not develop any new uses at the project site and would thus not require issuance of general plan amendments, zone change cases, conditional use permits, or vacations of public access easements from Kern County or the City of California City. As such, the No Project Alternative would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact and the No Project Alternative would result in less impact related to land use and planning compared to the proposed project.

Noise

Under the No Project Alternative, the project site would remain undeveloped. Noise sources from construction and operation of any on-site development would not be present, and existing noise conditions would remain the same. As such, the No Project Alternative would not result in generation of a substantial temporary or permanent increase in ambient noise levels or generate excessive ground-borne vibration. Therefore, there would be no impact and the No Project Alternative would result in less impact related to noise compared to the proposed project.

Public Services

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or police protection services would occur. 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 police protection. Therefore, there would be no impact and the No Project Alternative would result in less impact related to public services compared to the proposed project.

Transportation

Under the No Project Alternative, the proposed solar facilities would not be constructed, and this alternative would not introduce construction and operational-related trips. Existing traffic patterns and volumes on nearby roadways would remain unchanged. As such, the No Project Alternative would not conflict with a program, 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 impact related to transportation than the proposed project.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped, and no ground disturbing activities would 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 proposed project.

Utilities and Service Systems

Under the No Project Alternative, the solar facilities would not be constructed and there would be no new demand for utilities and service systems on the project site. As such, the No Project Alternative would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; generate solid waste in excess of state or local standards; or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impact related to utilities and service systems compared to the proposed project.

Wildfire

Under the No Project Alternative, the solar facilities would not be constructed, and the project site would remain in an undeveloped condition. As such, the No Project Alternative would not expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks, in each case related to the project. Therefore, the No Project Alternative would not contribute to significant cumulative wildland fire hazards that could potentially result from the development of other past, present, or reasonably foreseeable future projects in the vicinity.

Comparison of Impacts

The No Project Alternative would avoid creating nearly all of the significant and unavoidable impacts associated with the proposed project. This alternative would result in less impact to all remaining environmental issue areas with the exception of GHGs. As this alternative would not offset GHGs through the operation of a solar energy facility, impacts from GHGs 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*, including assisting California in meeting its GHG emissions reduction goals. Although this alternative would result in less environmental impacts overall, the objectives that shape the project would not be realized under this alternative.

6.7.2 Alternative 2: General Plan and Zoning Build-Out Alternative

Environmental Impact Analysis

Aesthetics

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing Kern County General Plan and Zoning Ordinance, and the City of California City General Plan and Zoning Ordinance. The project site includes existing Map Code designations for agricultural, residential, mobile homes, controlled development and open space, and other uses that are defined in the Kern County General Plan (Map Codes 5.6 and 8.5); Kern County Zoning Ordinance (Zone Classifications A, A-1, A-1 MH, PL RS, and PL RS MH); and City of California City General Plan and Zoning Ordinance (O/RA) (see Section 6.4.2, above, for additional details).

The General Plan and Zoning Build-Out Alternative would develop the project site into various uses allowable for agricultural, residential, and/or other development. Solar panels and an energy storage system to provide up to 500 MW of power to the regional electricity grid would not be installed. Depending on the existing land use designations and any development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively retaining the land for open space or other uses. Development of the project site with various structures or agricultural operations, where allowable, would result in visual changes from the existing undeveloped site conditions. New structures and man-made features that would be installed in designated agricultural, residential, and other use areas would likely contrast with the natural undeveloped environment and result in more diverse, significant impacts on the existing visual character and scenic quality in the area. Expansive agricultural operations, such as farms or ranches with relatively few visible structures, would likely result in less visual contrast overall and perceived as a negative change to viewers compared to development of land uses that would result in permanent man-made features. The continuation of development limitations within open space designations would not result in visual impacts that would degrade visual character and quality. Overall, the General Plan and Zoning Build-Out Alternative would result in similar but less visual impacts compared to the proposed project, due to the extensive size of the project area that would be converted from an undeveloped and generally natural landscape to a developed appearance. This level of visual change in an area of the valley that is relatively free of development would be a significant and unavoidable impact similar to the proposed project.

The General Plan and Zoning Build-Out Alternative could result in the installation of lighting fixtures and reflective surfaces where man-made features are developed; however, it is expected that such lights and surfaces would be dispersed across the project area and installed according to applicable Kern County and City of California City building requirements, which would minimize light and glare from facilities that

may be constructed. Therefore, this alternative would not create a significant impact, nor combine with cumulative projects to create a significant cumulative impact, related to light and glare. While significant and unavoidable impacts on visual quality under the General Plan and Zoning Build-Out Alternative would remain, this alternative would result in less aesthetic impacts as compared to the proposed project.

Agriculture and Forestry Resources

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide potential output of 500 MW of electrical energy to the regional electricity grid would not be installed. Depending on the existing land use designations and any development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively retaining the land for open space or other future development. Under this alternative, there would be no zoning changes and areas zoned for agricultural uses would be utilized for agricultural activities. Retaining the existing agricultural land designations and developing the applicable parcels into active agricultural operations would not conflict with existing agricultural zoning or result in the loss of agricultural resources in Kern County or California City. This alternative would result in no impact on agricultural resources, which is a reduction of impacts compared to the proposed project as agricultural land uses would not be removed from the project area.

As noted in Section 4.2, *Agriculture and Forestry Resources*, the project site is not under a Williamson Contract and any development under this alternative would not conflict with a Williamson Act contract. Neither the proposed project nor the General Plan and Zoning Build-Out Alternative would result in impacts on land subject to a Williamson Act contract.

No forestry resources are present in the project area. Therefore, neither the proposed project or General Plan and Zoning Build-Out Alternative would result in impacts on forestry resources.

Air Quality

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide up to 500 MW of power to the regional electricity grid would not be installed. Depending on the existing land use designations and development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively retain the land for open space or other future development. Both the proposed project and the General Plan and Zoning Build-Out Alternative would result in short-term construction emissions. The conversion of portions of the project site to agricultural, residential, and other uses over time is expected to result in less short-term construction air quality emissions than construction of the proposed solar facility and battery storage system due to reduced intensity of construction.

Over the operational life of Alternative 2, development involving ongoing human presence or activities would result in greater vehicle travel and associated air quality emissions than the proposed project, which would require limited operation and maintenance trips. Agricultural uses would also involve use of heavy

equipment such as tractors or other vehicles to manage the agricultural production and trucks to ship agricultural products. Further, livestock grazing and industrial activities may generate various air emissions from operational activities. Given these potential increases in emissions, this alternative would result in greater long-term air quality impacts in the air basin than the proposed project. It is expected that the General Plan and Zoning Build-Out Alternative would comply with all applicable air quality planning goals and agriculture emission standards set forth by EKAPCD, as required, and no conflicts would occur. Therefore, impacts of the General Plan and Zoning Build-Out Alternative are expected to be less than significant.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations from use of heavy equipment during construction, and generation of dust over the life of the agricultural uses in agricultural areas. Alternative 2 would not be required to implement Mitigation Measures MM 4.3-1KC through MM 4.3-4KC and MM 4.3-1CC through MM 4.3-4CC (reduced construction emissions; see Section 4.3, *Air Quality*), and MM 4.1-4KC and MM 4.1-4CC (limit vegetation removal; see Section 4.1, *Aesthetics*); therefore, development involving the use of heavy equipment or dust generation could expose sensitive receptors in the region to greater levels of pollutant concentrations than the proposed project. Alternative 2 could generate pollutants that could cause or exacerbate Valley Fever in a similar way as the proposed project. However, as this alternative would not require any permits, dust-minimizing techniques would not be implemented, and associated impacts related to Valley Fever would not be reduced to a less-than-significant level. Further, due to the unknown factors about COVID-19, the potential for agricultural activities and increased residential and industrial development to exacerbate the spread or severity of COVID-19 remains with the General Plan and Zoning Build-Out Alternative. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would result in significant and unavoidable project and cumulative impacts.

Overall, impacts on air quality under the General Plan and Zoning Build-Out Alternative would likely remain significant and unavoidable and result in greater long-term impacts to air quality than the project due to the greater operational emissions associated with the agricultural uses and increased vehicle travel associated with the residential and industrial development. In addition, mitigation measures for air quality emissions would not be implemented because no mitigation would be required to implement projects that are consistent with the existing zoning, permitted on a “by-right” basis within their respective zone districts, and/or are exempt from further review by CEQA.

Biological Resources

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. The conversion of the undeveloped land for agricultural, residential, open space, and other uses would impact biological resources (e.g., special-status plants, special-status wildlife, sensitive habitat, and potentially jurisdictional water features that occupy the area) to varying degrees depending on the specific uses. Development involving significant land disturbance or where man-made structures would be installed, such as for certain agriculture operations, residential use, etc., would impact biological resources similar to the proposed project. Land uses involving open space or livestock grazing would result in substantially fewer impacts on biological resources because a major portion of the existing ground surface and vegetation that provide habitat for

special-status species would be retained. As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations, the General Plan and Zoning Build-Out Alternative would result in similar impacts as the proposed project on biological resources. The alternative would involve more impervious surfaces and on-going human presence, particularly where intensive agriculture activities occur and where man-made structures and pavement are installed, such as within agricultural and residential developments. As this alternative may not require any discretionary permits, the implementation of Mitigation Measures MM 4.4-1KC through MM 4.4-21KC and MM 4.4-1CC through MM 4.4-19CC (see Section 4.4, *Biological Resources*) would not be required. Therefore, impacts would be potentially significant and unavoidable as it is unknown if conversion of the land to agricultural uses could result in the take of candidate, sensitive, or a special-status species.

The General Plan and Zoning Build-Out Alternative has the potential to result in direct impacts on sensitive natural plant communities and potentially jurisdictional waters where land development would occur in the project areas. The extent of the impacts in developed areas could potentially be greater than the proposed project if the footprints of any structures or drainage systems would result in greater permanent effects; however, where little or no physical development would occur the impacts on sensitive natural plant communities and potentially jurisdictional waters may be avoided, reduced, or indirect. The General Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measures MM 4.4-14KC, MM 4.4-22KC, MM 4.4-23KC, MM 4.4-20CC, and MM 4.4-21CC (see Section 4.4, *Biological Resources*), which would require permits and offsetting temporary and permanent impacts. Therefore, this alternative could result in substantial temporary or permanent impacts on sensitive natural plant communities and potentially jurisdictional waters that would not be offset, and such impacts would be potentially significant and unavoidable.

The General Plan and Zoning Build-Out Alternative would not create a significant impact related to the movement of any resident or migratory fish or wildlife species, disrupt established resident or migratory wildlife corridors, or conflict with local policies and ordinances protecting biological resources. The General 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. These impacts would be avoided, similar to the proposed project.

Based on the above, impacts under the General Plan and Zoning Build-Out Alternative has the potential to result in significant and unavoidable impacts on biological resources at the project-level and cumulative level as no mitigation measures would be required to reduce potentially significant impacts on special-status species, sensitive natural community, or jurisdictional water features. Therefore, the General Plan and Zoning Build-Out Alternative would result in greater impacts related to biological resources compared to the proposed project.

Cultural Resources

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. Depending on the existing land designations and any development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively, retaining the land for open space or other future uses.

Multiple significant or potentially significant cultural resources have been located within the project site where solar facilities are proposed as well as along the gen-tie line corridors identified for the project. Alternative 2 would have the potential to impact sites located in parcels identified for the project where ground disturbance would occur; however, the sites located in parcels that would be preserved as open space or otherwise remain undeveloped, or located along the gen-tie routes, would not be avoided. The General Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.5-1KC through MM 4.5-4KC or MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, *Cultural Resources*) because build out under the existing zoning designations may not require discretionary permits from Kern County or California City. Should buried archaeological deposits be uncovered during development and ground disturbance activities under Alternative 2, and should such sites meet the applicable significance criteria, they could be subject to significant impacts. Therefore, without implementation of mitigation measures, potential impacts on archaeological resources could be significant and unavoidable.

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, this alternative would comply with Health and Safety Code Section 7050.5 as required by law, which includes requirements similar to Mitigation Measure MM 4.5-4C and MM 4.5-4CC (see Section 4.5, *Cultural Resources*) and would ensure that any human remains encountered are appropriately addressed. Therefore, impacts would be less than significant.

Based on the above, the General Plan and Zoning Build-Out Alternative would result in greater cultural resource impacts compared to the proposed project as this alternative would not implement mitigation measures and the ground disturbance that would occur under this alternative could affect previously undiscovered subsurface cultural resources, and such discoveries may not be addressed adequately without mitigation. Impacts to unknown cultural resources under this alternative could be significant and unavoidable.

Energy

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. The portions of the project site that would be developed with agricultural, residential, and other uses would involve less-intensive construction activities and short-term electricity usage; however, the residential, agricultural, and other uses would require more energy over the operational life than the proposed project, due to higher levels of daily traffic and higher levels of energy usage compared to the proposed project facilities.

Similar to the project, the General Plan and Zoning Build-Out Alternative would be required to comply with the California Air Resources Board's (CARB) Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Impacts involving the wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant under this alternative or the proposed project. Furthermore, similar to the proposed project, the General Plan and Zoning Build-Out Alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This alternative would not, however, assist the State in meeting its renewable energy generation goals for investor-owned utilities.

Based on the above, impacts under the General 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 proposed project.

Geology and Soils

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site. Depending on the existing land designations and any development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively retaining the land for open space or other future uses.

Construction of the General Plan and Zoning Build-Out Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08), which includes similar requirements addressed in Mitigation Measures MM 4.7-1KC and MM 4.7-1CC (see Section 4.7, *Geology and Soils*). Kern County has adopted the CBC 2016 Edition (California Code of Regulations Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. The General Plan and Zoning Build-Out Alternative would adhere to requirements of the National Pollutant Discharge Elimination System (NPDES) and would comply with Kern County Grading Code (Section 17.28.070) and any comparable regulations administered by the City of California City, which includes requirements similar to Mitigation Measures MM 4.10-2KC and MM 4.10-2CC (conduct a hydrologic study; see Section 4.10, *Hydrology and Water Quality*) in order to address potential soil erosion and loss of topsoil. The alternative could include installation of septic tanks at residential and other buildings, unless a cost-effective sanitary sewer system could be devised. Such facilities would be constructed to comply with applicable requirements of the Kern County Environmental Health Services Division, following similar requirements specified in Mitigation Measures MM 4.7-2KC and MM 4.7-2CC.

As it relates to unique paleontological resource or site or unique geologic feature, similar to the project, under the General Plan and Zoning Build-Out Alternative, any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As this alternative would not require any permits, the General Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.7-3KC through MM 4.7-6KC and MM 4.7-3CC through MM 4.7-6CC to the prevent destruction of significant paleontological resources. Therefore, without implementation of mitigation measures, potential impacts to paleontological resources could be significant and unavoidable.

Based on the above, impacts to geology and soils would be slightly greater under this alternative compared to the project as the General Plan and Zoning Build-Out Alternative because mitigation measures would not be implemented to reduce potential impacts to paleontological resources and the alternative would involve construction of a greater number of structures.

Greenhouse Gas Emissions

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see

Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. As portions of the General Plan and Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the development (from increased water usage, traffic, operation of agricultural equipment, residential use, and livestock emissions), this would result in a net gain of GHG emissions within California. Unlike the project, the General Plan and Zoning Build-Out Alternative would not assist a utility-scale purveyor of electrical energy 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 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

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan designations and zoning classifications where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed.

There are no known hazardous materials in the soil that would be disturbed during construction of the residential, agricultural, or other land uses. Residential and industrial uses are not expected to generate significant quantities of hazardous materials. Agricultural uses on the project site could require the use of hazardous materials during operation, including use of herbicides and pesticides. However, as with the project, standard BMPs would ensure that exposure to potentially hazardous materials used or found on-site would be reduced or minimized, similar to those identified in Mitigation Measures MM 4.9-1KC, MM 4.9-2KC, MM 4.9-1CC, and MM 4.9-2CC (see Section 4.9, *Hazards and Hazardous Materials*). Impacts related to significant hazards to the public or environment would be less than significant.

As it relates to wildland fires, the project site is not located within a high fire hazard severity zone. In addition, the General Plan and Zoning Build-Out Alternative includes the development of residential, agricultural and/or other land uses, which have a similar potential overall for increasing fire risks. Due to the generally undeveloped rural character and limited infrastructure in this part of the County, cumulative impacts involving wildlife hazards would be significant and unavoidable, similar to the project. Since no discretionary permits would be required from Kern County or California City, this alternative would not implement Mitigation Measures MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*), which requires preparation of a fire safety plan.

Impacts under the General Plan and Zoning Build-Out Alternative and the project would result in less than significant impacts, with the exception of cumulative impacts involving wildland fire hazards which would remain significant and unavoidable.

Hydrology and Water Quality

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. Depending on the existing land

designations and any development limitations, this alternative would involve the active or passive conversion of all or a portion of land within each project parcel, or alternatively retaining the land for open space or other future uses.

The conversion of the project site to agricultural, residential, and other land uses would increase impervious surfaces due to the construction of various structures, roadways, and parking areas. The alternative would result in a similar total area of ground disturbance where development would occur, but a larger portion of the area would become impervious and would no longer allow for groundwater infiltration. The grading and development of the site could also alter the drainage patterns of the site. Compliance with the NPDES Construction General Permit, including development and implementation of a SWPPP, would be required under the General Plan and Zoning Build-Out Alternative for any grading that disturbs more than one acre of land. While the NPDES permit would reduce impacts on water quality, this alternative has the potential to substantially alter drainage patterns and infiltration due to development of the natural desert landscape with impervious surfaces. Similar to the project, this alternative would be required to prepare a detailed hydrology study to determine specific drainage and water quality impacts from the final construction plan and to provide targeted control measures, specified in a SWPPP, to ensure that drainage alterations and developed runoff does not result in significant impacts. This would be ensured through Mitigation Measures MM 4.10-1KC through MM 4.10-3KC and MM 4.10-1CC through MM 4.10-3CC (see Section 4.10, *Hydrology and Water Quality*). Implementation of Mitigation Measures MM 4.9-1KC and MM 4.9-1CC (see Section 4.9, *Hazards and Hazardous Materials*) would be required to prepare and implement a Hazardous Materials Business Plan (HMBP) to ensure the proper storage, handling, and disposal of hazardous materials over the life of the project. A similar requirement would apply to other future land uses that could occur in this alternative, if the volume of hazardous materials is large enough to trigger mandatory preparation/implementation of a HMBP.

The long-term agricultural, residential, and other uses that would be realized under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing, use of herbicides and pesticides, and continued potential for leaks of hydrocarbons (e.g., oil and gas) on roadways, whereas the proposed project's operation would not. The alternative would, thereby, pose a greater threat to water quality than the proposed project. The General Plan and Zoning Build-Out Alternative residential, agricultural, and other uses would result in greater demand for water resources, including groundwater than the project. Similar to the project, water demands would be met by developing on-site groundwater and would draw from the Fremont Valley Groundwater Basin or by importing water from a local purveyor such as the Antelope Valley-East Kern Water Agency. Due to the long-term increased water demand for residential, agricultural, and other uses, this alternative could result in unsustainable demand for groundwater resources and a significant impact.

Overall, the General Plan and Zoning Build-Out Alternative could result in potentially significant and greater impacts on hydrology and water quality compared with the project as operation of residential, agricultural, and other uses developed under this alternative would involve increased impervious surfaces, greater demand for groundwater resources, less-controlled use of chemicals that could affect water quality, and continued ground disturbance from activities such as grazing and plowing. With piecemeal development of smaller development sites, it is more likely that there would not be a comprehensive approach to managing site runoff, resulting in a higher potential for significant and unavoidable impacts, compared to the project, which would control runoff in a carefully designed and comprehensive manner for all developed areas.

Land Use and Planning

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. Unlike the project, the General Plan and Zoning Build-Out Alternative would not conflict with the existing land use policies and regulations at the project site, because the site would be developed with the current designations defined in the Kern County General Plan and zoning, and City of California City General Plan and zoning. This alternative would maintain consistency with current zoning as well as existing land use plans, policies, and regulations. However, some land uses may still require approvals of discretionary permits. Therefore, there would be no impact and the General Plan and Zoning Build-Out Alternative would result in less impact related to land use and planning compared to the project.

Noise

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of AC power to the regional electricity grid would not be installed. During construction, impacts under this alternative would be less than the impacts of the project, as the conversion of the project site to residential, agricultural, and other uses would occur in numerous, small-scale construction efforts, over a longer period of time, thus reducing the intensity of noise impacts and the extent to which neighboring land uses would be impacted by that noise. Since few, if any, future land uses that could be developed under this alternative would require approval of a discretionary land use permit, the construction noise control measures required for the project described in Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC (see Section 4.12, *Noise*) would not be implemented, except in limited instances. During operation, the residential uses would create new sensitive receptors in the area, as well as outdoor noise sources typical of rural residential and agricultural land uses, and these and other uses could create new permanent noise sources that may result in a substantial increase in noise levels. Alternative 2 would likely result in greater ambient noise levels over time than the proposed project, due to more noise sources and higher daily traffic volumes; however, impacts would likely be less than significant because all land uses in the Kern County and the City of California City would be subject to noise control standards according to existing zoning ordinance.

Based on the above, the alternative would result in somewhat lesser short-term construction noise impacts and somewhat greater long-term noise impacts than the project. Alternative 2 is not expected to generate substantial operational noise levels that would result in significant and unavoidable impacts.

Public Services

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see

Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of PV solar power to the regional electricity grid would not be installed.

Piecemeal construction of the General Plan and Zoning Build-Out for development of residential, agricultural uses would also potentially generate new ignition sources. During operation, this alternative could introduce new populations into the residential area and could generate new employment opportunities as the result of other new land uses. A substantial increase in local population is not anticipated for new agricultural land uses, as such workers would be expected to already live in the general area. This alternative would likely result in similar short-term impacts and greater long-term impact on fire safety services, compared to the project. In general, preparation of a fire safety plan for various small-scale individual development sites would not be required under this alternative, whereas the project must prepare and implement such a plan to mitigate potential impacts during construction, operations, and decommissioning, as required by Mitigation Measures MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*).

Construction activities related to installation of new structures would increase traffic volumes along SR 58 and SR 14, similar to the proposed project. The increase in traffic related to development of agricultural, industrial and residential uses during construction would be temporary and, thus, would not have a significant adverse effect on the Kern County Sheriff's Office (KCSO) protective service provision or California Highway Patrol's (CHP) ability to patrol the highways. During operation of this alternative, agricultural and industrial uses would increase in operational traffic to a larger extent than the project, due to the increase employees traveling to the project site, and residential uses would increase daily traffic due to residential activity. 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. With a larger residential population and a higher number of employees, this alternative would result in a greater demand on other public services, compared to the project, including schools, parks, and possibly other government facilities that provide services to a residential population. Under this alternative, there would be no requirement to pay fees and taxes to offset potential impacts to fire, Sheriff, and other public services, as would be required for the project by Mitigation Measures MM 4.13-2KC through MM 4.13-4KC, and MM 4.13-2CC through MM 4.13-4CC (see Section 4.13, *Public Services*). As a result, this alternative would result in greater and possibly significant and unavoidable impacts on public services.

Transportation

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed.

Construction of the residential, agricultural, and other uses would result in increased construction-related traffic. Because this would likely occur over a longer period of time, in a dispersed manner, the level of construction traffic and potential disruptions to traffic flow and the level of service on local streets and highways would likely be reduced, compared to the proposed project. The construction control measures to be implemented for the project (i.e., MM 4.14-1KC and MM 4.14-1CC; see Section 4.14, *Transportation*) would not be implemented. Once operational, the General Plan and Zoning Build-Out Alternative would involve a greater number of routine vehicle trips associated with residential, agricultural, and other uses. Due to the number of new residences that could be constructed, the increase in vehicle miles traveled could potentially be significant, and the increased traffic volumes could also potentially result in

significant level of service impact at some intersections, over the long-term. The permanent activities associated with agricultural, residential, and other uses involved with Alternative 2 would likely result in substantially greater vehicle miles traveled compared to the proposed project due to the greater number of vehicles that would operate in the area and a larger workforce conducting long-term activities.

As it relates to increasing hazards due to a geometric design feature or incompatible use, as the General Plan and Zoning Build-Out Alternative would not include installation of large arrays of ground-mounted solar panels on the project site, this alternative would not require the use of oversized vehicles operating on roadways and, as such, would not create a hazard to the public from use of oversized vehicles. Implementation of Mitigation Measure MM 4.14-1KC and MM 4.14-1CC would not be required. With regard to emergency access, this alternative would not be expected to cause a significant increase in congestion or significantly worsen the existing service levels at intersection roadways, therefore, the General Plan and Zoning Build-Out Alternative would have a less than significant impact on emergency access during construction and operation.

Therefore, the General Plan and Zoning Build-Out Alternative would result in greater impacts on transportation than the project as operational residential, agricultural, and other uses would increase the number of trips and vehicle miles traveled to the project site as compared to the project. Because this alternative is consistent with the General Plan and Zoning regulations which are intended to provide consistency with the capacity of the transportation network, significant and unavoidable impacts are not anticipated. It is possible that there could be locations where there are significant levels of service problems for periods of time, until capacity improvements are funded and constructed; however in this context, impacts can be considered less than significant.

Tribal Cultural Resources

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. According to record searches and tribal resource consultations, no tribal resources have been recorded within or are known to be present on the project site. Similar to the proposed project, there could potentially be significant impacts to unknown tribal cultural resources due to temporary or ongoing ground disturbances that would occur under the General Plan and Zoning Build-Out Alternative. Because discretionary permits would be required from Kern County or the City of California City involving CEQA review, Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, *Cultural Resources*) required for the proposed project would not specifically be implemented. Instances without such mitigation impacts on tribal cultural resources, therefore, could be greater than with the proposed project, and are potentially significant and unavoidable.

Utilities and Service Systems

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed.

The proposed residential, agricultural, and other land uses would create new impervious surfaces for new roadways, homes, and buildings/structures that may require construction of one or more municipal storm drainage systems. The residential, agricultural, and other land uses would also increase solid waste generation and disposal at landfills. The long-term commitment for water supply and wastewater treatment would increase due to the increased demands for residential, agricultural, and other land uses. Due to the increased population in the area, the overall demand and impact on utilities and service systems would be greater under the General Plan and Zoning Build-Out Alternative than the proposed project, and more water, sewer, electricity, and possibly natural gas infrastructure would need to be constructed than for the proposed project. Nonetheless, impacts are anticipated to be less than significant.

Wildfire

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed to the maximum extent possible in accordance with the existing general plan and zoning designations where the project is located, which include designations for agricultural, residential, open space, and other uses (see Section 6.4.2 for additional details). Solar panels and an energy storage system to provide 500 MW of electrical energy to the regional electricity grid would not be installed. As with the proposed project, this alternative would not occur 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 area with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan; however, transportation permits and standard traffic management practices would be required for certain projects, similar to the requirements described in Mitigation Measures MM 4.14-1KC and MM 4.14-1CC (see Section 4.14, *Transportation*). Therefore, the General Plan and Zoning Build-Out Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is of low topographic relief and is relatively flat. The site is located within a Local Responsibility Area (LRA) Moderate zone which is applied to wildland areas with low fire frequency and relatively modest fire behavior. As such, impacts of the alternative residential, agricultural, and/or other land uses relative to a high risk of wildfire are considered to be less than significant. However, the General Plan and Zoning Build-Out Alternative would result in new residential areas and structure development, which would have the potential for greater risk of exposure to wildland fire threats to homes or other structures. Since discretionary permits may not be required from Kern County or California City, this alternative would not implement Mitigation Measures MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*), which require preparation of a fire safety plan.

Given the location of the project site in a rural area and with limited infrastructure, the alternative and related development have the potential to result in significant and unavoidable cumulative impacts related to wildfire hazards. By introducing more homes and an increase in permanent residential and working population into this area, impacts under the General Plan and Zoning Build-Out Alternative would be greater than the proposed project.

Comparison of Impacts

The General Plan and Zoning Build-Out Alternative would result in less impact to aesthetics, agriculture and forestry resources, and land use and planning. This alternative would result in greater impacts in all remaining environmental issue areas. Greater impacts on air quality would result from emissions from the proposed residential, agricultural, and other land uses on-site, such as livestock emissions, as well as higher

vehicle exhausts from higher traffic volumes. As mitigation measures would not be implemented to avoid impacts on candidate, sensitive, or a special-status species and sensitive natural communities, impacts to biological resources would be greater. Given the ground disturbance required and no implementation of mitigation, greater impacts would occur to potentially undiscovered cultural and tribal resources. This alternative would result in greater energy impacts as the project site would not generate renewable energy as compared to the project and would therefore not assist the State in meeting its renewable energy generation goals. Greater impacts to geology and soils related to paleontological resources would result from greater initial soil disturbance during construction and no implementation of mitigation. This alternative would result in greater GHG emission impacts than the project because the potential offset or displacement of GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coal-fired power plants, would not be realized. Greater impacts to hydrology and water quality would result from a higher level of impervious surfaces and groundwater use and ground disturbance from activities such as grazing and plowing and the application of herbicides or pesticides from the potential agricultural uses. The increase in human population on-site during operation would also be anticipated to result in greater impacts with regard to noise, public services, utilities and service systems, and transportation. This alternative would not avoid significant cumulative impacts on aesthetics, would not eliminate significant and unavoidable impacts associated with air quality (project and cumulative), biological resources (cumulative only), hazards and hazardous materials (cumulative only), and wildfire (cumulative only). This alternative would also create additional significant and unavoidable impacts related to biological resources (project), cultural resources (project), geology and soils – paleontological resources (project), hydrology and water quality (project), and tribal cultural resources (project).

Relationship to Project Objectives

The General Plan and Zoning Build-Out Alternative would not achieve any of the project objectives listed above in Section 6.2, including the project objective related to assisting California in meeting its GHG emissions reduction goals.

6.7.3 Alternative 3: Reduced Acreage Alternative

Environmental Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, Sites 1, 3, 4, and 5 would be eliminated from the project footprint and Site 2 would be retained and developed in a similar manner as the proposed project. The remaining area (Site 2) would be developed would be consolidated immediately north of the California City Municipal Airport and further set back from public viewing areas along SR 14 and the Community of Freemont (see Figure 6-1, *Reduced Acreage Alternative*). Alternative 3 would reduce the extent to which undeveloped desert landscape would be converted in the area to a solar facility compared to the proposed project. In total, the Reduced Acreage Alternative footprint would be approximately 937 acres, which is a reduction of approximately 48 percent as compared to the proposed project (see Section 6.4.3, *Alternative 3: Reduced Acreage Alternative*, for additional details).

As with the proposed project site, the Reduced Acreage Alternative site may be visible to some degree from distant elevated views, such as from the mountain peaks and south facing slopes of the Tehachapi Mountains to the north and northwest, including areas where the Pacific Crest Trail (PCT) passes through

the Tehachapi Mountains. The Reduced Acreage Alternative would further offset the project from such distant views and increase the distance from the PCT from approximately 10 miles (proposed project) to approximately 12 (Alternative 3) miles. Although portions of the project site may be visible, neither the proposed project nor the Reduced Acreage Alternative would result in significant impacts on a scenic vista.

There are no officially designated State Scenic Highways in Kern County; however, the Reduced Acreage Alternative would increase the distance between the proposed solar facilities and SR 14, which is an eligible State Scenic Highway and a major travel corridor for motorists traveling through the area where the scenic qualities of Fremont Valley are visible. The development setback would reduce potential visual impacts along the highway corridor by maintaining a greater undeveloped, vegetative buffer between the highway and the solar facilities; however, solar facilities would likely still be visible to some degree from the highway. Regardless, neither the proposed project or the Reduced Acreage Alternative would result in significant impacts in this regard because SR 14 has not been officially designated as a State Scenic Highway.

The Reduced Acreage Alternative would reduce impacts of the proposed project on existing visual character and scenic quality by increasing the viewing distance between SR 14, Philips Road, and the Community of Fremont where the project's solar facilities would be most visible; retaining an undeveloped, vegetative buffer along SR 14; and reducing the amount of man-made structures to be installed and the extent of existing vegetation removal by approximately 48 percent. In addition, Alternative 3 would consolidate development to a single general area adjacent to existing development associated with the California City Municipal Airport. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.1-1KC through MM 4.1-4KC and MM 4.1-1CC through MM 4.1-4CC (see Section 4.1, *Aesthetics*), which would be implemented to reduce visual impacts on visual character and scenic quality. However, similar to the proposed project, there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts on existing scenic quality and visual character would remain significant and unavoidable.

As the Reduced Acreage Alternative includes the installation of solar panels over a large area, as with the proposed project, the potential for the solar panels to result in light and glare impacts would be less extensive, but similar to the project during construction and operation. Potentially substantial levels of glare and exposure durations from solar panels could impact daytime views for receptors in the area for periods of the day and multiple months of the year. The removal of approximately 48 percent of the project site would reduce the extent of glare effects and potentially reduce the overall areas affected by glare; however, the potential for substantial glare levels and exposure durations would remain. As with the proposed project, Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC would be implemented to minimize glare to less than significant levels.

The Reduced Acreage Alternative would have less overall impacts on aesthetics compared to the proposed project due to the reduction in project site size; however, impacts would remain significant and unavoidable for both the project- and cumulative-level impacts.

Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, Sites 1, 3, 4, and 5 would be eliminated from the project footprint and Site 2 would be retained and developed in a similar manner as the proposed project (see Figure 6-1, *Reduced Acreage Alternative*). In total, the Reduced Acreage Alternative footprint would be approximately 937 acres, which is a reduction of approximately 48 percent (see Section 6.4.3 for additional details).

The proposed project and the Reduced Acreage Alternative would both involve the installation of solar facilities on areas of land zoned for agriculture to non-agricultural uses. Similar to the project, the Reduced Acreage Alternative would not impact farmland, as there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area. In addition, according to available data, none of the parcels included as part of the project or any property in the vicinity of the project are subject to a Williamson Act Land Use contract or would result in the cancellation of an open space contract. Although portions of the site are agriculturally zoned, the property has not been actively farmed and the potential for future farming activities is limited due to the basin groundwater adjudication status. Therefore, this alternative would also not affect such resources.

Impacts to agriculture and forestry resources would remain less than significant. As the Reduced Acreage Alternative would include a smaller footprint, the Reduced Acreage Alternative would result in less impact on agriculture and forestry resources compared to the proposed project.

Air Quality

Under the Reduced Acreage Alternative, Sites 1, 3, 4, and 5 would be eliminated from the project footprint and Site 2 would be retained and developed in a similar manner as the proposed project (see Figure 6-1, *Reduced Acreage Alternative*). In total, the Reduced Acreage Alternative footprint would be approximately 937 acres, which is a reduction of approximately 48 percent (see Section 6.4.3 for more details). This area reduction would reduce the extent of construction-related impacts on air quality roughly proportionally. The use of construction vehicles, heavy equipment operation, and worker trips would be similar but less than the proposed project, but grading and other construction activities that would generate emissions would not occur on approximately 1,018 acres. Similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-4KC and MM 4.3-1CC through MM 4.3-4CC (see Section 4.3, *Air Quality*), in order to minimize dust and gaseous construction-related emissions. Impacts after mitigation would be less than significant.

Implementation of this alternative could expose the same sensitive receptors to substantial pollutant concentrations as the proposed project. To ensure there are no significant impacts related to potential for exposing sensitive receptors to pollutant concentrations, mitigation measures would be implemented to minimize project emissions and health-related effects, including Mitigation Measures MM 4.3-1KC through MM 4.3-3KC and MM 4.3-1CC through MM 4.3-3CC (see Section 4.3, *Air Quality*). Implementation of Mitigation Measures MM 4.3-1KC, MM 4.3-1CC, MM 4.3-5KC, and MM 4.3-5CC would also be required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints. As such and consistent with the proposed project, the impacts are conservatively considered to be significant and unavoidable.

During construction of both the proposed project and Alternative 3, it is possible that surrounding residents and on-site workers could be exposed to Valley Fever as fugitive dust is generated during construction. As with the proposed project, Mitigation Measures MM 4.3-6KC, MM 4.3-6CC, MM 4.3-7KC, and MM 4.3-7CC would be implemented to reduce risks pertaining to Valley Fever. Impacts would be less than significant after mitigation.

Overall, the Reduced Acreage Alternative would reduce dust generation and project emissions compared to the proposed project, and most air quality impacts would be less than significant with mitigation;

however, as with the proposed project, cumulative impacts could remain significant and unavoidable related to NO_x and PM₁₀ emissions as well as criteria air pollutants with indirect linkages to COVID-19 issues.

Biological Resources

Under the Reduced Acreage Alternative, approximately 48 percent of the proposed project footprint would be eliminated from the project and the remainder would be developed similar to the proposed project (see Section 6.4.3 for more details). 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, the Reduced Acreage Alternative would result in similar, but decreased impacts than the proposed project on special-status plants, special-status wildlife, sensitive habitat, and potentially jurisdictional water features (see Section 4.4, *Biological Resources*, for details). Areas occupied by or that provide suitable habitat for special-status species are spread out across the project site. The reduced acreage alternative would avoid solar development on approximately 1,018 acres (see Figure 6-1, *Reduced Acreage Alternative*), which would reduce direct and indirect impacts on special-status species that occupy their region. Specifically, biological resources and habitat within Sites 1, 3, 4, and 5 would not be directly impacted by the project, and these areas contain occurrences of western Joshua trees and silver cholla; sensitive natural vegetation communities; and both occupied and suitable habitat for various species. Regardless of the impact reduction, the Reduced Acreage Alternative would still result in potentially significant impacts on the same species as the proposed project. As with the proposed project, Mitigation Measures MM 4.4-1KC through MM 4.4-23KC and MM 4.4-1CC through MM 4.4-21CC, as well as Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC (see Section 4.1, *Aesthetics*) would be implemented to reduce project-level impacts to less than significant levels.

With regard to impacts on sensitive natural community and jurisdictional water features, the Reduced Acreage Alternative would result in similar but lesser impacts than the proposed project. The same types of vegetation communities and jurisdiction features would be impacted by construction of project facilities located in the reduced footprint. The same permitting requirements and implementation of mitigation measures would be required to ensure impacts would be less than significant, including Mitigation Measures MM 4.4-14KC, MM 4.4-22KC, MM 4.4-23KC, MM 4.4-20CC, and MM 4.4-21CC (see Section 4.4, *Biological Resources*).

Based on the above, project-level impacts under the Reduced Acreage Alternative would be less than significant with implementation of mitigation and similar to those of the project. However, cumulatively, this alternative would still result in significant and unavoidable impacts on biological resources. Regardless of the type of development, biological resources are being impacted throughout the Fremont Valley due to the number of large projects, many of which are solar energy facilities. However, as this alternative would avoid disturbing approximately 1,018 acres of land, which is largely undeveloped and vegetated, the Reduced Acreage Alternative would result in less impacts on biological resources compared to the project. All other impacts related to biological resources would remain similar to the proposed project, where the development footprints are the same.

Cultural Resources

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). As discussed in Section 4.5, *Cultural Resources*, no eligible cultural resources have been identified within the project area. Both the proposed project and the Reduced Acreage Alternative have the potential for encountering previously

undiscovered cultural resources; however, the potential for encountering such resources is expected to be less with the Reduced Acreage Alternative because 1,018 acres would not be developed. As with the proposed project, Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-1CC through MM 4.5-4CC (see Section 4.5, *Cultural Resources*) would be required to ensure impacts associated with the potential for encountering previously undiscovered cultural resources would be less than significant. 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 Measures MM 4.5-4KC and MM 4.5-4CC would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, impacts to cultural resources under the Reduced Acreage Alternative would be less than significant with implementation of the same mitigation measures identified for the proposed project. Furthermore, the Reduced Acreage Alternative would likely result in less overall impacts related to the potential for encountering previously undiscovered cultural resources compared to the project due to the reduction in total ground disturbance.

Energy

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). Eliminating 1,018 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 240 MW, a 48 percent reduction from the 500 MW targeted under the proposed project with up to 288 MWh of energy storage, based on the proportional reduction in acreage. Therefore, construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced as compared with the project. Similar to the proposed 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. The fuel efficiency of the vehicles being used by the employees and visitors under this alternative would be similar to the project; however, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. Similar to the proposed project, this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant and the Reduced Acreage Alternative would result in less energy impacts compared to the project.

Geology and Soils

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). 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 2016 Edition (California Code of Regulations Title 24) and the City of California City has adopted the CBC 2019 Edition. Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. In addition, as with the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-1KC, MM 4.7-2KC, MM 4.7-1CC, and MM 4.7-2CC (see Section 4.7, *Geology and Soils*), which a geotechnical study to evaluate soil conditions and geologic hazards, and that all project structures and soil-based wastewater disposal systems are constructed in accordance with the necessary specifications, procedures, and site conditions. Implementation of these mitigation measures, as with the project, would

serve to reduce impacts to less than significant levels related to strong seismic ground shaking, unstable geologic units, and expansive soils. In addition, with regard to soil erosion and loss of topsoil, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.10-2KC and MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*). As it relates to a 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 4.7-3KC through MM 4.7-5KC and MM 4.7-3CC through MM 4.7-5CC to prevent the destruction of significant paleontological resources. Therefore, impacts would be less than significant.

As discussed above, with implementation of mitigation consistent with the proposed project, impacts on geology and soils and paleontological resources would be less than significant with mitigation incorporated. However, impacts of the Reduced Acreage Alternative would result in less impacts compared to the proposed project due to the reduction in overall ground disturbance.

Greenhouse Gas Emissions

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). Construction and operational GHG emissions with the Reduced Acreage Alternative would be lower based on the smaller footprint; however, the smaller footprint would also reduce the solar energy generation and storage capacities. Eliminating 1,018 acres from development would reduce the project's clean and renewable energy generation capacity by approximately 48 percent from 500 MW to approximately 240 MW, and the storage capacity from approximately 600 MWh to 288 MWh. Reducing the project's renewable energy contribution would offset less GHG emissions and increase the need for other projects in the region to meet demand. As such, impacts involving GHG emissions would be greater under this alternative, but less than significant.

Hazards and Hazardous Materials

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). As with the proposed project, construction, operation, and decommissioning of the Reduced Acreage Alternative would involve the use of the same types of hazardous materials (i.e., fuels, lubricants, pesticides, CdTe, etc.). As with the proposed project, Mitigation Measures MM 4.9-1KC, MM 4.9-2KC, MM 4.9-1CC, and MM 4.9-2CC would be implemented to ensure all hazardous materials used or found on site are transported, handled, stored, and disposed of appropriately, and Mitigation Measures MM 4.9-3KC and MM 4.9-3CC would be implemented to address the potential for hazards impacts on airspace (see Section 4.9, *Hazards and Hazardous Materials*). Mitigation Measures MM 4.1-6KC, MM 4.1-7KC, MM 4.1-6CC, and MM 4.1-7CC (see Section 4.1, *Aesthetics*) would be required to demonstrate the solar panels and hardware are designed to minimize glare that could be hazardous to airport uses. Mitigation Measures MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*) would also be required to ensure appropriate debris and waste management during construction, operation, and decommissioning. As with the proposed project, impacts would be less than significant after mitigation.

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 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 Measures MM 4.13-1KC and MM 4.13-1CC (see Section

4.13, *Public Services*) would be implemented to reduce impacts to less than significant levels, which includes the development and implementation of a Fire Safety Plan for construction and operation of the project. Consistent with the proposed project and the analysis for wildlife, the Reduced Acreage Alternative is expected to result in cumulative impacts associated with wildland fires. Mitigation Measures MM 4.13-1KC and MM 4.13-1CC would be implemented to minimize cumulative impacts; however, due to the number of projects occurring in Fremont Valley and the potential for the dispersed project components to exacerbate fire risk, cumulative impacts associated with an increase fire risk would remain, as with the project.

For both the Reduced Acreage Alternative and the proposed project, impacts associated with wildfire would be less than significant after mitigation. The Reduced Acreage Alternative would result in somewhat less impacts compared to the proposed project due to the reduced area where fires could be ignited by the project; however, both the alternative and the proposed project would result in significant and unavoidable cumulative impacts.

Hydrology and Water Quality

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). The Reduced Acreage Alternative would result in reduced, but similar impacts on hydrology and water quality as the proposed project, including impacts involving water quality standards and discharge requirements; groundwater supplies; alteration of the existing drainage pattern; risk the release of pollutants due to project inundation; and conflicts with water quality control plans or sustainable groundwater management plans. By reducing the footprint of the project site by 1,018 acres, impacts on hydrology and water quality would be lower than the proposed project based on a reduction of ground disturbance, area occupied by project facilities, stormwater collection area and runoff volume, and water demand and use. Water used for the alternative would be obtained from the same sources identified for the proposed project, which could include local groundwater and surface flows. Nevertheless, mitigation measures would be required similar to the proposed project to ensure impacts would be less than significant, which includes Mitigation Measures Mitigation Measures MM 4.9-1KC and MM 4.9-1CC (see Section 4.9, *Hazards and Hazardous Materials*), and MM 4.10-1KC through MM 4.10-3KC and MM 4.10-1CC through MM 4.10-3CC (see Section 4.10, *Hydrology and Water Quality*).

Overall, impacts related to hydrology and water quality would be less than significant with implementation of mitigation measures similar to those implemented under the proposed project. Furthermore, the Reduced Acreage Alternative would have less impact related to hydrology and water quality compared to the proposed project due to the reduced footprint, which would result in reduced grading activities, overall amount of impervious surface, and water use when compared to the proposed project.

Land Use and Planning

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). The Reduced Acreage Alternative area would remain within portions of unincorporated Kern County and City of California City, and within the same types of land uses designations and zoning classifications. The Reduced Acreage Alternative would still require approval for general plan amendments, zone change cases, conditional use permits, and non-summary vacations from Kern County in addition to approvals for a conditional use permit from the City of California City in order to operate a solar facility and energy storage facility on the project

site. The same mitigation measures identified for the proposed project would be implemented to ensure impacts are less than significant, including MM 4.9-3KC and MM 4.9-3CC (see Section 4.9, *Hazards and Hazardous Materials*) and MM 4.11-1KC and MM 4.11-1CC (see Section 4.11, *Land Use and Planning*). Impacts would be less than significant under this alternative, and consistent with the proposed project. Land use and planning impacts would be similar under the Reduced Acreage Alternative when compared to the proposed project.

Noise

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). Under the Reduced Acreage Alternative all overall construction and operational methods, workforce, and timing would be reduced when compared with the proposed project. Under this alternative, as the number of on-site construction equipment is assumed to be similar under this alternative on a daily basis, as with the proposed project, construction and decommissioning activities could generate noise greater than Kern County and City of California City standards for short periods of time. The Reduced Acreage Alternative would implement the same mitigation measures as the proposed project to minimize noise during construction and decommissioning, including Mitigation Measures MM 4.12-1KC, MM 4.12-2KC, MM 4.12-1CC, and MM 4.12-2CC (see Section 4.12, *Noise*). Impacts associated with construction and operation noise would be less than significant with mitigation for both the proposed project and the Reduced Acreage Alternative. Similar to the proposed project, potential ground-borne vibration or ground-borne noise levels would be less than significant and no mitigation would be required.

Based on the above discussion, the Reduced Acreage Alternative would reduce the number of sensitive receptors that may be exposed to construction and noise impacts as well as the duration of potential noise exposure during construction. The elimination of project areas in the southwestern most area would increase the distance between the project and residential dwellings in the area, further reducing the level of impacts compared to the project.

Public Services

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). The Reduced Acreage Alternative would have a similar construction schedule and require a similar or possibly a lower number of construction workers. Up to 20 full-time staff would be employed to operate each site, and the number of operational staff would be reduced by reducing the project footprint by approximately 48 percent. The alternative would increase fire service demands similar to the proposed project during construction and operation. As with the proposed project, Mitigation Measures MM 4.13-1KC, MM 4.13-2KC, MM 4.13-1CC, and MM 4.13-2CC (see Section 4.13, *Public Services*) would be required. These measures would require the development of a Fire Safety Plan to minimize fire risks during construction and operation and the payment of development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities would increase traffic volumes along SR 58 and SR 14, similar to the project. The increase in traffic would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. In addition, fences would be installed around the perimeter of the northern site, substation, and other areas requiring controlled access,

for safety and security purposes. During operation of this alternative, the additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic. Therefore, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

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. It is noted that the total amount of fees and taxes for this alternative, as required by Mitigation Measures MM 4.13-2KC through MM 4.13-4KC and MM 4.13-2CC through MM 4.13-4CC, would be lower than for the proposed project.

Transportation

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the project. Similar to the proposed project, during construction of the Reduced Acreage Alternative, which would require similar construction trips and travel distances for installation of the solar facilities, the level of service impacts and the volume of vehicle miles traveled would be less, due to the reduced amount of materials and equipment that would be used to construct the project. During operation of this alternative, distances of day-to-day O&M trips would be the same, while total trips and total vehicle miles traveled would be reduced in comparison with those of the project. Similar to the project, the total number of daily trips and distances traveled for O&M of the solar panels would be substantially less than during construction. Both the proposed project and Reduced Acreage Alternative would result in less than significant impacts regarding conflicts with a program, plan, ordinance or policy establishing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; and conflicts or inconsistencies with CEQA *Guidelines* Section 15064.3, subdivision (b).

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the proposed 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 proposed project, this alternative would also implement Mitigation Measures MM 4.14-1KC and MM 4.14-1CC (see Section 4.14, *Transportation*), which would reduce impacts from oversized construction vehicles and would also provide further assurances for emergency access, to reduce impacts during construction to less than significant.

Based on the above, impacts would be less than significant. Given the reduction in total construction and operational vehicle trips under this alternative as compared to those of the proposed project, the Reduced Acreage Alternative impacts related to transportation would be less compared to the proposed project.

Tribal Cultural Resources

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). No tribal cultural resources were identified within or immediately adjacent to the project site; however, there is a potential to encounter and disturb unknown resources during site clearing and grading activities, which would require implementation of avoidance measures specified in Mitigation Measures MM 4.5-1KC through MM 4.5-4KC and MM 4.5-

1CC through MM 4.5-4CC (see Section 4.5, *Cultural Resources*). Therefore, potential impacts to tribal cultural resources would be reduced, and with the same mitigation measures, would also result in a less than significant impact.

Utilities and Service Systems

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). Eliminating 1,018 acres from project development would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 240 MW of energy, a 48 percent reduction from the 500 MW targeted under the proposed project with up to 288 MWh of energy storage, based on the proportional reduction in acreage. Therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project.

As with the project, installation of solar panels would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, and telecommunications, to a lesser extent. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand for period panel washing, in comparison with the project. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the proposed project due to the reduced number of employees required for maintenance of the solar facilities. As the Reduced Acreage Alternative would develop the project site, impervious surfaces would be minimized as much as possible, as with the proposed project. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.10-1KC, MM 4.10-2KC, MM 4.10-1CC, and MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*), and MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*) to reduce impacts to less than significant levels.

This alternative is expected to result in less than significant impacts to utilities and service systems and impacts would be less compared to the proposed project due to the reduced number of employees and reduced water demand required for maintenance of the solar panels.

Wildfire

Under the Reduced Acreage Alternative, the project's footprint would be reduced from approximately 1,955 acres to approximately 937 acres (see Section 6.4.3 for additional details). As with the proposed project, this alternative is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede 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. Therefore, the Reduced Acreage Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan. Nonetheless, Mitigation Measures MM 4.14-1KC and MM 4.14-1CC (see Section 4.14, *Transportation*) would be implemented to ensure the project would not impede emergency access conditions during construction.

The project site has low topographic relief and is relatively flat. The project site is located within an LRA Moderate zone, which is applied to wildland areas with low fire frequency and moderate fire risk. Similar to the project, the energy storage facility developed under this alternative would have the potential to burn and, should this occur, would have the potential to expose workers and environment to pollutants and fire hazards. As such, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.13-1KC

and MM 4.13-1CC (see Section 4.13, *Public Services*), which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning, which would further reduce the fire risks on-site. 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, solar panels would require installation of the electrical collector and gen-tie lines, similar to the project. The installation of the electrical lines would not be placed within a high fire hazard zone and the vegetation would be cleared and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. No slopes are located within proximity to the project site. As such, similar to the project, the Reduced Acreage Alternative would not result in 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 as proposed for the project, this alternative is expected to result in less than significant impacts associated with wildfire at the project level. However, given the location in a rural area and limited infrastructure, the project and related projects would have the potential to result in significant and unavoidable cumulative impacts related to exacerbating wildfire risks and adverse post-fire conditions. The Reduced Acreage Alternative would likely result in less impact than the project due to the reduced footprint compared to the project, but a significant and unavoidable cumulative impact would remain.

Comparison of Impacts

The Reduced Acreage Alternative footprint would reduce the proposed project footprint by approximately 48 percent, and thus roughly proportionally reduce project-related impacts associated with ground disturbance, traffic, noise, water use, waste generation, and emissions. The overall duration of construction and the workforce needed during construction and operation of this alternative would be similar to the proposed project but are ultimately expected to be less due to fewer facilities being installed and maintained. The generation capacity would also change roughly proportionally from approximately 500 MW to 240 MW, and the storage capacity would change from approximately 600 MWh to 288 MWh, based on the footprint reduction with this alternative. Similar to the proposed project, this alternative would require plan amendments and permits upon project approval for construction and operation of a commercial solar electrical generating facility. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for the majority of environmental issue areas, depending on the physical location of environmental resources and the selected footprint of the Reduced Acreage Alternative. However, this alternative would offset fewer GHG emissions from fossil fuel-based electrical generating facilities, given the reduced solar energy output, and the need for other projects in the region to meet demand. In addition, the Reduced Acreage Alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), hazards and hazardous materials (cumulative only), and wildfire (cumulative only).

Relationship to Project Objectives

Although Alternative 3 would achieve some of the project objectives, it would not achieve the goals of developing facilities to produce the necessary amount of clean electricity to help achieve California's renewable energy goals to the degree associated with the proposed project. This alternative would meet the

objective of developing a solar energy generation and storage facility; integrate operating facilities with other existing solar projects; assist the County in continuing the goal in the Energy Element of its General Plan; promote economic development; and support California's efforts to reduce GHG emissions and the RPS Program. However, the Reduced Project Alternative would not achieve the project objectives of constructing and operating a solar energy facility to produce (up to) 500 MW of reliable electricity and 600 MWh of energy storage. It is unknown if this alternative would achieve the project objective of producing and transmitting electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.

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

Environmental Impact Analysis

Aesthetics

Under Alternative 4, No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or parking areas of existing commercial and industrial facilities throughout the Fremont Valley. With regard to impacts related to scenic vistas, there are no local areas that are designated as scenic vistas within the vicinity of the site. While portions of the PCT that passes through the area have views of the valley, installation of solar panels on rooftops or ground mounted in parking areas of commercial and industrial facilities dispersed throughout the valley would not substantially change the quality of the view. Thus, given that no local areas are designated as scenic vistas and development under this alternative would be dispersed throughout Fremont Valley, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would not have a substantial adverse effect on a scenic vista.

The project would not be visible from any officially designated State or County Scenic Highway. Although SR 14 is designated as an eligible State Scenic Highway, it has not yet been officially designated as a State Scenic Highway. Given the fact that development under this alternative would be dispersed throughout western Fremont Valley, this alternative would not substantially damage scenic resources. Impacts would be less than significant under Alternative 4 and impacts would be less than those of the project.

The installation of small to medium solar PV systems on large commercial and industrial rooftops would generally be visually unobtrusive or unnoticeable from receptors at ground level. Ground-mounted panels in parking areas would be visible only from nearby vantage points and would not be concentrated in large arrays, as with the proposed project. However, from other vantage points, the installation of rooftop and/or parking area 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. Exceptions may occur 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 and either avoidance of such buildings or incorporation of design measures to minimize potential impacts on historic integrity of historically significant structures.

With regard to light and glare, construction and operation of Alternative 4 would require implementation of Mitigation Measures MM 4.1-5KC through MM 4.1-7KC and MM 4.1-5CC through MM 4.1-7CC (see Section 4.1, *Aesthetics*) similar to the project. As development of this alternative would be dispersed throughout the Fremont Valley and not concentrated within proximity to other solar and wind developments, this alternative would eliminate the significant and unavoidable impacts of the proposed project relative to scenic quality, visual character, and glare.

Based on the above, this alternative would avoid significant and unavoidable aesthetic impacts that would occur under the proposed project. With implementation of mitigation measures to address impacts related to historic buildings, impacts would be less than significant. Alternative 4 would result in reduced and less than significant impacts related to aesthetics compared to the significant and unavoidable impacts of the project due to substantial conversion of an open desert landscape into large concentrations of solar panels and related facilities, as well as additional transmission line structures of substantial height.

Agriculture and Forestry Resources

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities, or on already disturbed parking areas. Since the solar PV systems proposed for this alternative would be constructed on existing structures or already disturbed ground associated with vehicle parking, 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. As such, no impacts to agriculture or forestry resources would occur. Therefore, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in fewer impacts related to agriculture and forestry resources compared to the proposed project, as this alternative would not require ground disturbance.

Air Quality

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. Under this alternative, no construction activities associated with ground disturbance would occur. Thus, this alternative would eliminate the significant and unavoidable project-level and cumulative construction impacts related to regional air quality emissions and implementation of applicable air quality plans. Emissions would be limited to trucks transporting the solar panels, passenger vehicles driven by construction crews, and minor ground disturbance. Mitigation measures would be implemented as necessary to ensure that impacts are reduced as it relates to regional and localized construction emissions and valley fever exposure. Implementation of Mitigation Measures MM 4.3-1KC through MM 4.3-4KC, and MM 4.3-1CC through MM 4.3-4CC (see Section 4.3, *Air Quality*) would be required. The potential for dispersing concentrations of criteria air pollutants such as PM_{2.5} would be substantially lower than the proposed project due to reduced ground disturbance, and therefore, impacts associated with exacerbating the spread or severity of COVID-19 would be reduced. Implementation of Mitigation Measures MM 4.3-5KC and MM 4.3-5CC would still be required. Additionally, the substantial reduction in dust generation would also reduce concerns over Valley Fever; however, Mitigation Measures MM 4.3-6KC, MM 4.3-6CC, MM 4.3-7KC, and MM 4.3-7CC would be required.

During operation, Alternative 4 would have similar impacts on air quality as the project related to occasional vehicular visits for maintenance. As such, operational impacts would also be less than significant. Overall, air quality impacts under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would be less than significant. Therefore, this alternative would result in less impacts related to air quality compared to the proposed project as this alternative would result in a substantial reduction in construction activities, as well as negligible emissions associated with long-term maintenance activities.

Biological Resources

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Fremont Valley. The project site would remain undeveloped and only developed areas, typically on the rooftops of commercial and industrial facilities, in Fremont Valley 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 sensitive habitat or other natural communities. As such, Mitigation Measures MM 4.4-1KC through MM 4.4-23KC and MM 4.4-1CC through MM 4.4-21CC (see Section 4.4, *Biological Resources*) would not be required. Therefore, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would not contribute to a cumulative loss of habitat that supports special-status and rare species that have potential to occur on the project site, including various special-status plants; special-status wildlife; sensitive habitat and vegetation communities; and potentially jurisdictional water features. As such, significant and unavoidable cumulative impacts would be eliminated as well. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in no impacts related to biological resources compared to the project as this alternative would not require ground disturbance or other landscape alterations that could adversely impact sensitive plants, wildlife, natural communities, or wetland resources.

Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops or nearby parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. Given that development would occur on the rooftops of existing structures, or in already disturbed parking areas, there would be no potential for disturbance or damage to buried archaeological resources and human remains potentially located in undisturbed land throughout the project site. However, 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; 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. Given the inability to impact archaeological resources under this alternative, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in fewer impacts related to cultural resources compared to the proposed project, as this alternative would not require ground disturbance.

Energy

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or already disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. As such, construction energy consumption would be limited to fuel to power trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings, and would be lower, compared to the amount of transportation fuel required to construct the project. Over the long-term, there would be negligible consumption of energy involving maintenance activities with some minimal traffic to transport special workers and/or equipment. Therefore, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would have a less than significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources and this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As similar renewable solar energy generation capabilities would be provided, long-term impacts would be similar compared to the proposed project.

Geology and Soils

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or already disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. Given that only developed areas would be modified, there would be no potential for the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only 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 landslides, be located on expansive soil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would not require implementation of mitigation measures, including Mitigation Measures MM 4.7-1KC through MM 4.7-6KC, and MM 4.7-1CC through MM 4.7-6CC (see Section 4.7, *Geology and Soils*); and MM 4.10-2KC and MM 4.10-2CC (see Section 4.10, *Hydrology and Water Quality*). Development of rooftop and parking area 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 - Distributed Commercial and Industrial Rooftop Solar Only would result in less of an impact related to geology and soils compared to the proposed project as this alternative would not result in significant ground disturbance.

Greenhouse Gas Emissions

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities. This alternative would generate substantially less 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 electricity generating potential and associated GHG emission offset potential would be lower than the proposed project. Further, this alternative would have less or no energy storage, whereas the project would provide 600 MWh storage to maintain energy generating capacity when sunlight is not available. Therefore, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only 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, and because of the general absence of energy storage.

Hazards and Hazardous Materials

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or already disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. The installation of rooftop solar equipment on existing structures or on ground-mounted arrays in parking areas would involve the use of fewer hazardous materials overall (such as chemicals and fuels) than the project construction on the undeveloped project site. Similar to the proposed project, Alternative 4 would implement similar standard requirements to Mitigation Measures MM 4.9-2KC and MM 4.9-2CC (see Section 4.9, *Hazards and Hazardous Materials*), and MM 4.13-1KC and MM 4.13-1CC (see Section 4.13, *Public Services*), to ensure all hazardous materials used or found on site are transported, handled, stored, and disposed of appropriately. Similar standard requirements to Mitigation Measures MM 4.16-1KC and MM 4.16-1CC (see Section 4.16, *Utilities and Service Systems*) would also be required to ensure appropriate debris and waste management during construction, operation, and decommissioning. As with the proposed project, impacts would be less than significant after mitigation.

While it is unknown where the solar PV systems would be located specifically within the Fremont Valley, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, similar to the project, would adhere to any notification requirements related to the applicable Airport Land Use Compatibility Plan.

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 Fremont Valley, it is expected that these areas where the solar PV systems would be installed would be in more urbanized areas that would not include a battery storage component. The installation of solar panels on existing buildings or on already disturbed parking areas would not exacerbate wildfire risk and would have less potential to induce a wildfire as compared to the propose project.

Based on the above, impacts under this alternative would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in less impacts related to hazards and hazardous materials compared to the proposed project, as this alternative would require usage of fewer hazardous materials and would result in less potential wildfire risk.

Hydrology and Water Quality

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. 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 SWPPP, would not be required for rooftop solar systems under this alternative, and may not require such compliance for parking area installations, as long as they do not trigger this due to the amount of land area disturbed. Thus this alternative could entirely or mostly eliminate implementation of Mitigation Measures MM 4.10-1KC and MM 4.10-1CC (see Section 4.10, *Hydrology and Water Quality*). Similar to the proposed project, this alternative would require implementation of similar requirements to Mitigation Measures MM 4.9-1KC and MM 4.9-1CC (see Section 4.9, *Hazards and Hazardous Materials*), which would require preparation and implementation of a Hazardous Materials Business Plan. Implementation of this mitigation measure would reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only. However, implementation of Mitigation Measures MM 4.10-2KC and MM 4.10-2CC would not be required, as this alternative would not disturb soils such that drainage patterns would be substantially altered.

As it relates to groundwater supplies, water requirements for periodic panel washing under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would be similar to or possibly reduced, as numerous private owners may wash panels less frequently or use other water sources more often. As such, this alternative would not substantially deplete groundwater levels in comparison to existing conditions, and therefore, impacts would be less than significant.

With regard to existing drainage patterns, as small to medium solar PV systems would be developed on the rooftops or already disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley, drainage patterns and flow paths would not be altered. As such, impacts related to drainage patterns would be less than significant.

The Fremont Valley 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. The use of water to construct and clean the solar panels would be less than the proposed project; water that would be needed would be sourced from locations similar to the proposed project or from the buildings' water connections on which they are installed. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be reduced compared to the project and less than significant. To a large extent, this alternative would not require ground disturbance, except in some

circumstances where panels may be erected on the ground surface of previously disturbed parking areas, which could introduce more pollutants to stormwater during construction. Water requirements during construction and operation of this alternative would be reduced as dust suppression or concrete mixing would be substantially reduced during construction. Furthermore, operational panel washing is expected to be less frequent.

Land Use and Planning

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley. Under this alternative, there would be no zone changes or General Plan amendments required. Installation of such solar systems would be consistent with current zoning as well as existing land use plans, policies, and regulations. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only alternative would also achieve Kern County's and City of California City's goals and policies relative to accommodating renewable energy facilities. However, the placement of solar panels on existing structures and existing parking areas 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 PV solar systems consistent with this alternative. This alternative would have no impact involving conflicts with land use plans, policies, or regulations and thus, would have less impact than the project.

Noise

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities. Rooftops and parking areas of existing commercial and industrial buildings that would be developed under this alternative would be in developed areas. As a result, noise related to construction activities could also impact sensitive receptors, albeit in less intensive ways than the larger-scale construction of the project. The operational noise generated from these solar PV systems would be low level and 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 - Distributed Commercial and Industrial Rooftop Solar Only would not require the use of vibratory rollers or other construction equipment with high ground-borne vibration levels as installation of solar facilities would occur on pre-existing disturbed and graded land. Therefore, it is likely that construction vibration would have a less than significant construction vibration impact. Similar to the project, operation of the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would require regular maintenance trucks (0.076 in/sec PPV) and panel washing activities. Whether rooftop solar systems are proposed on historic buildings, which are more susceptible to vibration damage, or other types of newer buildings, this level of vibration would not exceed vibration thresholds and, as such, would result in less than significant impacts.

The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in reduced and less than significant impacts related to construction and operational noise, compared to the proposed project.

Public Services

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley and the project site would remain undeveloped. Unlike the project, this alternative would not introduce structures into a currently undeveloped area and would not permanently increase the concentration of persons in an area that would require supporting public services.

With regard to fire protection, it is expected that the areas where the solar PV systems would be installed in more urbanized areas. The installation of solar panels on existing structures and in disturbed parking areas would not result in increased fire risk and would not require additional fire services. With regard to police protection, as the proposed small to medium solar PV systems would be installed in more urbanized areas, it is unlikely that construction and operation of the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only 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 on public services are anticipated to be less than significant and not require mitigation. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would not result in payment of substantial fees to support fire and police services provided by Kern County and the City of California City.

Transportation

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley.

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 and fewer in number than the project given the location of the existing facilities and the smaller sizes of the solar systems, thereby reducing potential impacts on the roadways surrounding the project site. As such, roadway segments within the Fremont Valley are not expected to be impacted at levels that would trigger a significant transportation impact during construction of this alternative. During operation of this alternative, day-to-day O&M trips would be less than those of the project, since this alternative involves smaller on-site systems that require fewer persons for maintenance than the much larger solar facilities included in the project. However, as with construction, these maintenance trips would be more dispersed than the project given the location of the existing facilities. It is also estimated that the total number of daily trips for maintenance of the solar

panels are less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less than significant impact on area roadways. Closures of roadways and the need for numerous construction traffic control measures would not be required, as they would be for the proposed project.

With regard to consistency with CEQA *Guidelines* Section 15064.3(b), the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would not increase vehicle trips or distances for the workforce already occupying the buildings which host the rooftop panels. There would be some increase in vehicle trips, and thus vehicle miles traveled, to perform occasional maintenance activities, unless those were to be performed by already on-site workers. Therefore, impacts related to vehicle miles traveled would be less than significant under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, as with the proposed project.

Based on the above, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in a reduced impact related to transportation compared to the proposed project due to the dispersed nature of the construction and operational trips.

Tribal Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of commercial and industrial facilities situated throughout the Fremont Valley. It is unlikely that these smaller solar systems would have an impact on tribal cultural resources, which do not occur on building rooftops, and only shallow/minor ground disturbance would be required to construct small systems within disturbed parking areas. As such, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would have no impact to tribal cultural resources and no mitigation would be required. As such, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in less impacts related to tribal cultural resources as compared to the proposed project.

Utilities and Service Systems

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Fremont Valley.

With regard to water demand, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would likely require minimal water for construction as no dust suppression or concrete mixing would be required during rooftop solar panel installations, and minor amounts of water for construction of small ground level systems in disturbed parking areas. This alternative would not result in substantial amounts of wastewater, energy consumption, or natural gas. In addition, construction of the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only 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 smaller,

more dispersed panel systems under numerous individual ownerships. As the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would occur on already developed sites and structures, this alternative would not require preparation of a drainage plan to reduce potential increases in stormwater runoff, and construction of new or alterations to existing municipal storm drainage systems would not be required. Wastewater and solid waste generation associated with this alternative would be substantially reduced as compared to the project due to fewer employees required for maintenance of the solar panels at each of the dispersed sites.

Based on the above, impacts to utilities and service systems would be substantially lower than with the proposed project and less than significant.

Wildfire

Under the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops and/or disturbed parking areas of existing commercial and industrial facilities situated throughout the Fremont Valley and would not introduce infrastructure that would result in increased fire risk. Development of this alternative would not require grading and excavation to change the overall slope of the affected site. As such, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only 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.

Because this alternative would occur on existing structures and on previously disturbed parking areas, within already developed sites and areas, the impact would be less than the project, on both a project level and with respect to cumulative impacts. With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only and other pending projects in this desert area have the potential to result in a cumulative impact related to: impairment of an adopted emergency response plan or emergency evacuation plan; exposure of people to pollutant concentrations from a wildfire; and/or the installation or maintenance of associated infrastructure that may exacerbate fire risk or other environmental impacts. Thus, implementation of this alternative would still result in a significant and unavoidable cumulative impact.

Comparison of Impacts

The No Ground-Mounted Utility-Solar Development Alternative - Distributed Commercial and Industrial Rooftop Solar Only would result in less impact related to aesthetics, agriculture and forestry resources, air quality, cultural resources, biological resources, energy consumption, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation, tribal cultural resources, utilities and service systems, and wildfire. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (project and cumulative), air quality (project and cumulative), and biological resources (cumulative only) that would occur under the project. However, this alternative's contribution to significant and unavoidable impacts to wildfire (cumulative only) would remain.

Relationship to Project Objectives

This alternative would partially satisfy the project objective of assisting California in meeting its GHG emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by Senate Bill 32 in 2016. However, up to 600 MWh of energy storage (a component of the proposed project) would not be constructed under this alternative. This alternative would not achieve other project objectives including developing on a previously disturbed site that is close to transmission infrastructure in order to minimize environmental impacts and maximizing the use of existing transmission infrastructure. Additionally, there are some drawbacks to this alternative that include, but are not limited to those listed below.

- Up to 600 MWh of centralized energy storage would not be included.
- The system would not likely be built out within a time frame that would be similar to that of the project.
- The project proponent does not have immediate control or access to potential urban sites with existing or proposed commercial or industrial buildings that could accommodate rooftop facilities to generate 500 MW of solar power.
- A distributed system of the scale of the project would be cost-prohibitive to implement under a Power Purchase Agreement (PPA) due to competitive pricing of PPAs and reduced cost-efficiency of distributed solar.

This alternative theoretically has the potential to generate up to 500 MW of electricity but it would be used entirely on the sites generating the power and would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Additionally, this alternative does not include up to 600 MWh of centralized energy storage. 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 time frame.

6.8 Environmentally Superior Alternative

As presented in the comparative analysis above and summarized 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 “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, air quality, biological resources, and noise. Offsets of GHG emissions generated at fossil fuel-based electrical generating facilities would be reduced under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology or up to 600 MWh of energy storage. 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, land use and planning, public services, transportation, tribal cultural resources, utilities and service systems, and wildfire hazards. Thus, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered 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 sites required to develop 500 MW of distributed solar generated electricity on building rooftops and the required land to support up to 600 MWh of energy storage. 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 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	U.S. Department of Agriculture, Natural Resource Conservation Service
China Lake Naval Weapons Center	U.S. Environmental Protection Agency Region IX
U.S. Air Force	U.S. Federal Aviation Administration
U.S. Army	U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers	U.S. Marine Corps
U.S. Bureau of Land Management	U.S. Navy
U.S. Federal Communications Commission	

8.2 State of California

California Air Resources Board	California Native American Heritage Commission
California Department of Conservation	California Public Utilities Commission – Energy Division
California Department of Conservation, Geologic Energy Management Division	California Regional Water Quality Control Board, Lahontan Region
California Department of Fish and Wildlife (Region 4)	California State Lands Commission
California Department of Food & Agriculture	Caltrans Division of Aeronautics
California Department of Parks and Recreation	Caltrans District 6
California Department of Toxic Substances Control, Region 1	Caltrans District 9
California Department of Water Resources, San Joaquin District	Governor’s Office of Planning and Research, State Clearinghouse
California Energy Commission	California State University Bakersfield
California Highway Patrol	

8.3 Regional and Local

Adams, Broadwell, Joseph & Cardozo	City of Maricopa
AES Midwest Wind Generation	City of McFarland
Antelope Valley-East Kern Water Agency	City of Ridgecrest
Bakersfield City Planning Department	City of Shafter
Bakersfield City Public Works Department	City of Taft
California City Airport	City of Tehachapi
California City Planning Department	City of Wasco
Center on Race, Poverty, & the Environment	Congentrix Sunshine, LLC
City of Arvin	Defenders of Wildlife

Delano City Planning Department	Kern County Water Agency
Desert Tortoise Council	Kings County Planning Agency
Desert Tortoise Preserve Committee	Leadership Counsel for Justice & Accountability
East Kern Air Pollution Control District	LiUNA Labor Union
East Kern Airport District Engineer	Local Agency Formation Commission
East Kern Airport District	Los Angeles Audubon
Eastern Kern Resource Conservation District	Los Angeles County Regional Planning Department
EDP Renewables Company	Mojave Airport
Fotowatio Renewable Ventures	Mojave Air and Space Port
Iberdrola Renewables	Mojave Foundation
Integrated Waste Management	Mojave Unified School District
Inyo County Planning Department	Muroc Unified School District
Kelly Group	National Public Lands News
Kern Audubon Society	Native American Heritage Council of Kern County
Kern County Administrative Officer	Northcutt and Associates
Kern County Agriculture Department	Pacific Gas & Electric Company
Kern County Airports Department	Pleistocene Foundation
Kern County Council of Governments	Recurrent Energy
Kern County Environmental Health Services Department	Renewal Resources, Group Holding Company
Kern County Fire Department	San Bernardino County Planning Department
Kern County Library	San Luis Obispo County Planning Department
Kern County Library, California City Branch	Santa Barbara County Resource Management Department
Kern County Parks and Recreation	Sierra Club/Beyond Coal Campaign
Kern County Public Works Department/ Building & Development/Floodplain	Sierra Club/Kern Kaweah Chapter
Kern County Public Works Department/ Building & Development/Survey	Southern California Edison
Kern County Public Works Department/ Building & Development/Development Review	Southern San Joaquin Valley Information Center
Kern County Public Works Department/ Building & Development/Code Compliance	Structure Cast
Kern County Public Works Department/Building & Development/Floodplain	Tehachapi Area Association of Realtors
Kern County Public Works Department/Operations & Maintenance/Regulatory Monitoring & Reporting	Terra-Gen Power, LLC
Kern County Sheriff's Department	The Gorman Law Firm
Kern County Superintendent of Schools	Tulare County Planning & Development Department
	Ventura County RMA Planning Division
	Verizon California, Inc.
	Wind Stream, LLC

8.4 Individuals

Carol Vaughn

Catherine Ngo

David Laughing Horse Robinson

David Walsh

Joyce LoBasso

Robert Burgett

8.5 Tribal Groups

Chumash Council of Bakersfield

Fernandeno Tataviam Band of Mission Indians

Kern Valley Indian Council

Kitanemuk & Yowlumne Tejon Indians

San Fernando Band of Mission Indians

San Manuel Band of Mission Indians

Santa Rosa Rancheria

Twenty-Nine Palms Band of Mission Indians

Tejon Indian Tribe

Torres Martinez Desert Cahuilla Indians

Tubatulabals of Kern County

Tule River Indian Tribe

vak titvu titvu vak tilhini

Wukshache Indian Tribe – Eshom Valley Band

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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

Cindi Hoover – Supervising Planner

Mark Tolentino – Staff Planner

9.2 Technical Assistance

Michael Baker International (MBI)

John Bellas – Principal-in-Charge/Quality Control Manager

Randy Nichols – CEQA Project Manager

Nicole Marotz, LEED AP, AICP – Senior Environmental Planner/Assistant Project Manager

Jennifer Wu – Senior Environmental Planner/Assistant Project Manager

Brent Schleck – Senior Environmental Planner

Garett Peterson – Associate Environmental Planner

Nathan Levey – Assistant Environmental Planner

Zhe Chen – Senior Air Quality/Greenhouse Gas/Noise Specialist

Ryan Winkleman – Senior Biologist/Senior Ecologist

Tim Tidwell – Senior Biologist/Regulatory Permitting

Ashley Spencer – Natural Resources Specialist

Nick Hearth – Senior Archaeologist

Madonna Marcelo – Geology/Soils/Paleontological Resources

Julianne Frabizio, PE – Surface Water/Water Supply

Alexander Maher, PE – Surface Water/Water Supply

Dawn Wilson, PE, TE – Senior Transportation Engineer

Hilary Ellis – Graphics/Word Processing

Jim McPherson – GIS/Graphics

Ana Cotham – Technical Review

Panorama Environmental

Susanne Heim – Principal/Senior Visual Resources Specialist

Aaron Lui – Project Manager/Visual Resources Specialist

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