

# Draft Environmental Impact Statement / Environmental Impact Report for the Edwards AFB Solar Project

SCH# 2017111079

*Edwards AFB Solar Project*  
(PP18136)



Kern County  
Planning and Natural Resources Department  
Bakersfield, California



Department of the Air Force  
Headquarters 412th Test Wing (AFMC)  
Edwards Air Force Base California

June 2019



Lorelei H. Oviatt, AICP, Director  
2700 "M" Street, Suite 100  
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**PLANNING AND NATURAL  
RESOURCES DEPARTMENT**

Planning  
Community Development  
Administrative Operations

June 7, 2019

**File:** Franchise Agreement

ADDRESSEE LIST (See Distribution List)

**Re: Draft Environmental Impact Report for the Edwards Air Force Base Solar Project by Edwards AFB Solar, LLC (PP18136)**

Dear Interested Party:

Kern County and Edwards Air Force Base have prepared a Draft Environmental Impact Statement/ Environmental Impact Report (Draft EIS/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 generate a combined total of approximately 750 megawatts (MW) of electricity on approximately 4,000 acres of non-excess land at Edwards Air Force Base. The Project consists of two main components: 1) a solar facility site located on land that is subject to the jurisdiction of the U.S. Air Force (Air Force); and 2) generation interconnection lines (gen-tie lines) located on land that is subject to the jurisdiction of Kern County (County) and the Air Force.

The project site is located approximately one mile east of State Route (SR) 14, and approximately five miles south of State Route (SR) 58. Generally bound by a railroad track to the north, an unimproved dirt road to the south, open desert to the east, and SR 14 to the west.

The project proponent is requesting: (a) A franchise agreement from Kern County, for routing a generation tie (gen-tie) transmission line from the proposed solar facility to the Southern California Edison (SCE) Windhub Substation and/or the privately owned Westwind Substation. A 750-MW solar photovoltaic electrical generating facility and associated infrastructure are also proposed on Edwards Air Force Base, which have also been accounted for in this EIR; however, Kern County has no permitting authority on this portion of the project as that site is not under the land use jurisdiction of Kern County.

For the purpose of environmental review, in accordance with the California Environmental Quality Act, 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 franchise agreement. Enclosed is a copy of the Draft EIS/EIR.

If we have not received a reply from you by **July 26, 2019, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIS/EIR.

**Should you have any questions regarding this project, please do not hesitate to contact Janice Mayes at (661) 862-8793 or via email at [MayesJ@kerncounty.com](mailto:MayesJ@kerncounty.com).**

Sincerely,

Terrance Smalls, Supervising Planner  
Advanced Planning Division





**DEPARTMENT OF THE AIR FORCE**  
 HEADQUARTERS 412TH TEST WING (AFMC)  
 EDWARDS AIR FORCE BASE, CALIFORNIA

31 May 2019

**MEMORANDUM FOR DISTRIBUTION**

**FROM:** 412 CEG/CEVA  
 120 N. Rosamond Blvd.  
 Building 3735, Suite A  
 Edwards Air Force Base, California 93524-8600

**SUBJECT:** Notice of Availability and Public Hearings for the Edwards Air Force Base Solar Project Joint Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR)

1. The United States Air Force and the County of Kern have prepared a joint draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) associated with lease of Air Force land on Edwards Air Force Base (AFB) to a private entity for construction of a utility scale solar facility and construction of a 10 to 14 mile generation tie-line on private land off-base in Kern County, California. The EIS/EIR was written in order to identify and address potential environmental impacts associated with implementation of the Edwards AFB Solar Project (ESP) on Edwards AFB, California (please see Figure 1 below).

**Figure 1. Proposed ESP Project Location**



2. In addition to the correspondence we provided you during scoping of the project we are now providing you notification of the impending release of our draft EIS/EIR as well as a CD of the draft EIS/EIR in its entirety. The CD includes a duplicate, stand-alone, Executive Summary as well as all appendices associated with the draft EIS/EIR.

3. The ESP would be a solar photovoltaic renewable energy project that would produce up to 750 megawatts (MW) of energy at Edwards AFB that would be collected and sold to the commercial energy grid. The final scale of the ESP is anticipated to be between 100 and 750 MW. Construction would require the lease and subsequent development of up to 4,000 acres of non-excess land in the northwestern corner of Edwards AFB.
4. For the County, the Proposed Action involves the routing of a 230 kilovolt (kV) generation tie line (gen-tie) from the proposed solar facility to a point of interconnection where power generated by the project can be delivered to the grid. Points of interconnection include either the Southern California Edison (SCE) Windhub Substation and/or the privately owned Westwind Substation.
5. The draft EIS/EIR has been prepared in accordance with National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations (CFR) 1500 -1508), Department of the Air Force regulation 32 CFR 989 *Environmental Impact Analysis Process*, California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.), CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.) and the Kern County CEQA Implementation Document (Kern County, 2004).
6. The following environmental issues were identified by the Air Force and County of Kern during internal scoping for the potential for adverse impacts and have been analyzed within the draft EIS/EIR document: Aesthetics, Agricultural Resources, Air Quality, Airspace Management and Use, Biological Resources, Cultural Resources, Environmental Justice, Greenhouse Gas Emissions, Hazardous Materials, Infrastructure, Land Use, Noise, Public Services, Safety, Socioeconomics, Soil and Geological Resources, Transportation, and Water Resources.
7. The Air Force and County of Kern have considered a broad range of alternatives for implementing the Proposed Action. During the initial planning stages, alternative selection standards were developed to define the necessary project criteria that must be met by alternatives to be carried forward for analysis within the draft EIS/EIR. The selection standards were grouped into three main categories that include renewable energy technology standards, project siting standards and gen-tie route standards. The alternatives considered by the Air Force and County of Kern were determined to meet the minimum selection standards. The Proposed Action is subject to the requirements and objectives of Executive Order 11988, *Floodplain Management*, as amended. Consistent with Executive Order 11988 and Executive Order 11990, alternatives were analyzed for the potential for location within a floodplain and/or wetland. All alternatives for the Proposed Action, including alternatives for the gen-tie line, would result in impacts to floodplains.
8. Alternatives considered in the draft EIS/EIR include:
  - a. Alternative A (Full Project Build-Out): This alternative would include the construction, operation and maintenance of a full-scale solar photovoltaic (PV) facility of up to 750 MW of energy and construction of an energy storage system with a maximum capacity of 1 gigawatt hour (GWh) on up to 4,000 acres of undeveloped Air Force property located in the northwest corner of Edwards AFB. The developer plans to implement the "mow and roll" technique of site preparation which allows for a significant reduction in the extent of rough grading across the site, but solar array construction may still require grading of the project areas to a slope of 2% or less across the majority of the ESP project footprint. During ESP site construction, solar panels would be mounted on metal pipe or H beam foundations that are approximately four to six inches in diameter. The panels would be installed using either a single axis tracking system, whereby the panels are controlled to move with the sun, or on a fixed tilt system, whereby the panels are fixed at a particular angle. Pipe pile foundations would be driven to depths of 18 feet deep. When piles cannot be driven to the required depth, an alternate spread footing would be required; these footings would be approximately six feet wide by six feet long and two feet deep. Siting of panels would be in a grid-pattern at regular intervals to support efficient energy production and to facilitate ease of maintenance. In addition to

the PV solar arrays, this alternative would include on-base substations, a switchyard, service buildings and warehouses, necessary access roads, drainage facilities and up to 20 acres of energy storage. Energy storage would either be distributed throughout the solar facility or centralized adjacent to onsite substations. Alternative A would include construction of an associated gen-tie line of approximately 10 to 14 miles in total length that would run either to SCE's Windhub Substation and/or the privately owned Westwind Substation. The proposed gen-tie line has a north-south component and an east-west component. There are two alternatives for the north-south component all of which would run from the proposed solar PV facility to Purdy Avenue. The east-west component would continue along Purdy Avenue for approximately 4.5 miles and would then continue west for 2.5 miles on undeveloped land until heading north for approximately 1 mile through undeveloped land to Oak Creek Road. At Oak Creek Road, the east-west component splits into option A which would run south of Oak Creek Road, and option B which would run north of Oak Creek road for approximately 1/2 mile before continuing to the Windhub Substation and/or the Westwind Substation. The Proposed Action would include a combination of one north-south alternative and one east-west alternative.

b. Alternative B (Reduced Project Build-Out): This alternative would include the construction, operation and maintenance of a reduced-scale solar PV facility on up to 1,500 acres of Air Force property located in the northwest corner of Edwards AFB within the same project footprint as Alternative A. Alternative B would also include an energy storage system with a maximum capacity of 1 GWh and would utilize the same gen-tie line route and interconnection points as proposed in Alternative A. The reduced project alternative would require approximately 1/3 to 1/2 of the acreage and construction-related ground disturbance described in Alternative A. This alternative would provide the developer with additional siting flexibility to further avoid environmentally sensitive or incompatible development areas.

c. Alternative C (No Action/No Project): Under this alternative the proposed solar facility would not occur.

9. We invite you to provide comments on the ESP proposal and alternatives. In order to be incorporated into the final EIS/EIR any comments regarding the ESP proposal should be sent no later than Friday, July 26, 2019. Please send your comments regarding the draft EIS/EIR, along with the name and address of an appropriate contact person, to:

Ms. Andrea Brewer-Anderson  
 412 CEG/CEVA  
 120 North Rosamond Boulevard  
 Bldg. 3735, Suite A  
 Edwards AFB, California 93524  
 Phone: (661) 277-4948  
 andrea.brewer-anderson@us.af.mil

10. Additionally, the Air Force invites your participation in our NEPA public hearings which will be held from 6:00 PM to 9:00 PM on Wednesday, June 26, 2019 and Thursday, June 27, 2019. The Air Force and County of Kern will host open house public meetings from 5:00 PM to 6:00 PM immediately preceding the hearings. The purpose of the open house public meetings is to discuss analysis and environmental effects of the ESP initiative under NEPA and CEQA, and to conduct a public meeting under Section 106 of the National Historic Preservation Act. The open house public meetings and NEPA public hearings will be held at the following locations:

June 26, 2019  
Mojave Veterans Memorial Building  
15580 O Street  
Mojave, California 93501

June 27, 2019  
Hummel Hall Community Center  
2500 20<sup>th</sup> Street West  
Rosamond, California 93560

11. We look forward to hearing from you regarding the ESP EIS/EIR. If you have any questions or concerns, need further information, or would like a hard copy of the draft EIS/EIR document or appendices mailed to you please contact Ms. Andrea Brewer-Anderson at (661) 277-4948 or by e-mail at [andrea.brewer-anderson@us.af.mil](mailto:andrea.brewer-anderson@us.af.mil).



THOMAS A. RADEMACHER, NH-III  
Chief, Assets Branch  
Environmental Management Division  
412th Civil Engineer Group

6 Attachments:

1. Kern County Cover Letter (precedes this memorandum)
2. Air Force correspondence to Kern County dated June 4, 2018
3. Kern County Notice of Availability
4. Kern County Notice of Completion
5. Executive Summary: Edwards AFB Solar Project Draft EIS/EIR
6. Edwards AFB Solar Project Draft EIS/EIR and Appendices

DISTRIBUTION: Attached

Edwards AFB Solar Project (EIR 07-17)  
WO #PP18136  
I:\Planning\WORKGRPS\WP\LABELS\eir07-17jkm.ec.doc  
Sc 11/15/17

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

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

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, Sustainability Office  
412 TW/XPO, Bldg 2750, Rm 204-38  
195 East Popson Avenue  
Edwards AFB, CA 93524

Federal Aviation Administration  
Western Reg Office/  
Airport Div - Room 3000  
15000 Aviation Boulevard  
Lawndale, CA 90261

Federal Communications Comm  
18000 Studebaker Road, #660  
Cerritos, CA 90701

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

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

U.S. Dept of Agriculture/NRCS  
5000 California Avenue, Ste 100  
Bakersfield, CA 93309-0711

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

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

U.S. Postal Service  
Address Management Systems  
28201 Franklin Parkway  
Santa Clarita, CA 91383-9321

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

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

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

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

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

State Dept of Conservation  
Division of Oil & Gas  
4800 Stockdale Highway, Ste 108  
Bakersfield, CA 93309

State Dept of Conservation  
Office of Land Conservation  
801 "K" Street, MS 18-01  
Sacramento, CA 95814

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

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

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

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

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

Kern County  
Agriculture Department

Kern County Administrative Officer

Kern County Public Works Department/  
Building & Development/Floodplain

Kern County Public Works Department/  
Building & Development/Survey

Kern County  
Env Health Services Department

Kern County Fire Dept  
Brian Marshall, Fire Chief

Kern County Fire Dept  
Cary Wright, Fire Marshall

Kern County Library/Beale  
Local History Room

Kern County Library/Beale  
Andie Apple

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

Kern County Library  
Mojave Branch  
16916 1/2 Highway 14, Space D2  
Mojave, CA 93501

Kern County Library  
Wanda Kirk/Rosamond Branch  
3611 Rosamond Boulevard  
Rosamond, CA 93560

Kern County Parks & Recreation

Kern County Sheriff's Dept  
Administration

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

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

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

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

Mojave Unified School Dist  
3500 Douglas  
Mojave, CA 93501

Southern Kern Unified School Dist  
P.O. Box CC  
Rosamond, CA 93560

Kern County Superintendent of Schools  
Attention Mary Baker  
1300 17th Street  
Bakersfield, CA 93301

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

Golden Hills Community Serv Dist  
P.O. Box 637  
Tehachapi, CA 93581

Mojave Public Utility Dist  
15844 "K" Street  
Mojave, CA 93501

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 Air Pollution  
Control District

Mojave Airport  
1434 Flightline  
Mojave, CA 93501

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

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

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

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

AT&T California  
OSP Engineering/Right-of-Way  
4540 California Avenue, 4th Floor  
Bakersfield, CA 93309

Kern Audubon Society  
Attn: Harry Love, President  
13500 Powder River Avenue  
Bakersfield, CA 93314

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

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

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

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

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

California Farm Bureau  
2300 River Plaza Drive, NRED  
Sacramento, CA 95833

Mojave Chamber of Commerce  
P.O. Box 935  
Mojave, CA 93502

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

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Pacific Crest Trail Program Manager  
1323 Club Drive  
Vallejo, CA 94592

Anitra Kass  
Pacific Crest Trail Association  
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Bermuda Dunes, CA 92203

Sierra Club/Kern Kaweah Chapter  
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Bakersfield, CA 93385

Southern California Edison  
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Rosemead, CA 91770

Southern California Gas Co  
1510 North Chester Avenue  
Bakersfield, CA 93308

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

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

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

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

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

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

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

Kitanemuk & Yowlumne Tejon Indians  
Chairperson  
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Tubatulabals of Kern County  
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Tule River Indian Tribe  
Neal Peyron, Chairperson  
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Portland, OR 97209

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Oakland, CA 94607

Supervisor Zack Scrivner  
2nd District

State Dept of Public Health  
Drinking Water Field Ops  
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Fresno, CA 93704-1755

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

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Rick Neff  
9405 Arrowpoint Blvd  
Charlotte, NC 28273

Terra-Gen  
Randy Hoyle, Sr. Vice Pres  
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San Diego, CA 92130

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

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

Fotowatio Renewable Ventures  
Sean Kiernan  
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San Francisco, CA 94104

EDP Renewables Company  
53 SW Yamhill Street  
Portland, OR 97204

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

Darren Kelly, Sr. Business Mgr  
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1095 Avenue of the Americas, 25th Floor,  
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New York, NY 10036-6797

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

Recurrent Energy  
Seth Israel  
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San Francisco, CA 92109

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

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

T.T Case  
P.O. Box 2416  
Tehachapi, CA 93581

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

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

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

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

David Walsh  
22941 Banducci Road  
Tehachapi, CA 93561

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

U.S. Representative Katie Hill  
1008 W. Ave M14  
Suite E  
Palmdale, CA 93551

U.S. Representative Kevin McCarthy  
4100 Empire Drive  
Suite 150  
Bakersfield, CA 93309





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 412TH TEST WING (AFMC)  
EDWARDS AIR FORCE BASE CALIFORNIA

Mr. James E. Judkins  
Director, 412th Civil Engineer Group  
225 North Rosamond Boulevard  
Edwards Air Force Base, California 93524

4 June 18

Ms. Lorelei Oviatt, Director  
Kern County Planning and Natural Resources Department  
Public Services Building  
2700 "M" Street, Suite 100  
Bakersfield, California 93301

Dear Ms. Oviatt:

The Air Force requests the County of Kern serve as permitting authority on the Edwards AFB Solar Project (ESP). The Air Force requests this permitting authority include approval of building, grading and associated plans as mutually agreed upon by both Lead Agencies.

The Air Force believes County of Kern service in the requested manner is supported by the proprietary jurisdiction of the land upon which the ESP is proposed as well as the third-party status of the anticipated project developer Terra-Gen, LLC. It is anticipated that the County of Kern will also serve as a taxing authority upon Terra-Gen's solar development.

Should you or your staff have any further questions or concerns regarding this correspondence, my point of contact is Ms. Andrea Brewer-Anderson, who can be reached at (661) 277-4948.

Sincerely

A handwritten signature in blue ink that reads "James E. Judkins".

JAMES E. JUDKINS, NH-IV  
Base Civil Engineer



**DRAFT ENVIRONMENTAL IMPACT REPORT  
NOTICE OF AVAILABILITY FOR PUBLIC REVIEW**

This is to advise that Edwards Air Force Base and the Kern County Planning and Natural Resources Department have prepared an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the project identified below. As mandated by State law, the minimum public review period for the EIR is 45 days. The document and documents referenced in the Draft EIS/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/>).

A public hearing has been scheduled with the Kern County Board of Supervisors to receive comments on the document on: **December 17, 2019**, at 2:00 p.m. or soon thereafter, Chambers of the Board of Supervisors, First Floor, Kern County Administrative Center, 1115 Truxtun Avenue, Bakersfield, California

Comments can also be submitted at one of the additional public workshops that will be held from **5:00 p.m.** at the following locations and dates:

Mojave Veterans Hall, Room 1, 15580 O Street, Mojave, CA	June 26, 2019
Hummel Community Building, Room 2, 2500 20 <sup>th</sup> Street West, Rosamond, CA	June 27, 2019

The comment period for this document closes on **July 26, 2019**. Testimony at future public hearings may be limited to those issues raised during the public review period either orally or submitted in writing by 5:00 p.m. the day the comment period closes.

**Project Title:** Edwards AFB Solar Project by Edwards AFB Solar, LLC (PP18136); Franchise Agreement.

**Project Location:** The project facility site is located at the northwest corner of Edwards Air Force Base (AFB), at the intersection of Lone Butte Road and East Trotter Avenue, approximately 6 miles northeast of the community of Rosamond and 6 miles south of the unincorporated town of Mojave, in eastern Kern County, Sections 13, 14, 15, 22, 23, 24, and 27, T 10N/R 12W and Sections 15, 16, 17, 18, 19, and 20, T 10 N/R 11W; in San Bernardino Base and Meridian, County of Kern, State of California.

The Franchise Agreement corridors for the generation tie-line route options are located at:

- **(N/S Option 1)** runs 5.6-miles from the Edwards AFB solar generation site north adjacent to 20th Street, west adjacent to East Reed Avenue, north adjacent to 15th Street, then generally follows the north side of the Burlington Northern Santa Fe Railway (BNSF) and finally runs west to the intersection of Purdy Avenue and the BNSF (Sections 7 & 18, T 10N/R 11W; Sections 1 & 12, T 10N/R 12W; Sections 26, 27, 35, 36 T 11N/R 12W SBBM) County of Kern, State of California.
- **(N/S Option 2)** runs 4.5-miles from the northwestern edge of the Edwards AFB solar generation site north on Lone Butte Road, west on West Reed Avenue, and north on United Street, where it intersects with Purdy Avenue (Sections 2, 10, & 15 T 10N/R 12W; Sections 27 & 34, T 11N/R 12W SBBM) County of Kern, State of California.
- **(E/W Options A & B)** runs 9.8-miles from the intersection of Purdy Avenue and the BNSF west to the Westwind Substation and the Windhub Substation. Along Oak Creek Road for 0.6 mile there are two options for the east–west gen-tie route—**Option A** would run north of Oak Creek Road (Sections 19, 20, 21, 27, 28, 30 T 11N/R 12W; Sections 16, 17, 20, 21, 25, 26, 27, 28 T 11N/R 13W SBBM) and **Option B** would run south of Oak Creek Road (Sections 19, 20, 21, 27, 28, 30 T 11N/R 12W; Sections 17, 20, 21, 25, 26, 27, 28 T 11N/R 13W SBBM) County of Kern, State of California.

**Project Description:** The project proponent is requesting: (a) Franchise Agreement for installation of the proposed generation-tie line within the Kern County right-of-way, which would support the Edwards AFB approximately 750 MW solar facility on up to 4,000 acres of Edwards Air Force Base owned non-excess lands. The generation-tie line would run approximately 14 miles northwest from the Edwards AFB solar facility to the SCE Windhub Substation, south of Oak Creek Road, and/or the privately-owned Westwind substation, north of Oak Creek road.

**Anticipated Significant Impacts on Environment:** Aesthetics and Air Quality

Document can be viewed online at: <https://kernplanning.com/planning/environmental-documents/>

For further information, please contact Janice Mayes, Planner 3 (661) 862-8793) or [majesj@kerncounty.com](mailto:majesj@kerncounty.com).

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

**MOJAVE DESERT NEWS**

JKM:sc (06/07/19)

cc: County Clerk (2) (with fee)  
Environmental Status Board  
Sierra Club/Kern Kaweah Chapter  
LiUNA/Arthur Izzo  
Supervisorial District No. 2

California Native Plant Society/Kern Chapter  
Kern County Archaeological Society  
Native American Heritage Pres. Council/Kern County  
Center on Race, Poverty and Environment (2)  
Communities for a Better Environment

Edwards EUL (EIR 07-17)  
es 05/21/2019  
I:\Planning\WORKGRPS\WP\LABELS\eir  
07-17jkm.noa.EdwardsEUL.docx

42917005000  
AGAJANIAN TR  
41312 RESORTER BL  
PALM DESERT CA 922119243

23746119003  
ALTA WIND VIII LLC  
200 DONALD LYNCH BL STE 300  
MARLBOROUGH MA 017524816

42715202005  
ALTA WINDPOWER DEV LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42917033001 **INC**  
ANTELOPE VALLEY E KERN WTR AG  
\*  
\*

42818124008 **DUP**  
ANTELOPE VALLEY E KERN WTR AG  
P O BOX 3176  
QUARTZ HILL CA 93536

42917032008 **DUP**  
ANTELOPE VALLEY E KERN WTR AG  
P O BOX 3176  
QUARTZ HILL CA 93536

42820115007 **DUP**  
ANTELOPE VALLEY E KERN WTR AG  
P O BOX 3176  
QUARTZ HILL CA 93536

42702028009  
ANTELOPE VALLEY-EAST KERN  
WATER AGENCY  
6500 W AVENUE N  
PALMDALE CA 93551

42703034009  
ANTELOPE VALLEY-EAST KERN  
WATER AGENCY  
P O BOX 3176  
QUARTZ HILL CA 935360176

42712040002  
ARTESIAN COMPANY LTD  
901 MONTANA AV # B  
SANTA MONICA CA 90403

42702043002  
ASPHALT TERMINALS LLC  
19100 RIDGEWOOD PW  
SAN ANTONIO TX 782591834

42730212007  
AYALA MAURICIO  
13501 S MONA BL  
COMPTON CA 902222712

42902011003  
AYRANJYAN ZARUHI  
10545 SIERRA HW  
MOJAVE CA 935017028

42803012002  
BNSF RAILWAY CO  
PO BOX 961039  
FORT WORTH TX 76161

42820002002 **DUP**  
BNSF RAILWAY CO  
PO BOX 961039  
FORT WORTH TX 76161

42917001008  
BOBBITT JANET J REVOCABLE  
FAMILY TRUST  
9000 S 5TH AV  
INGLEWOOD CA 903052711

42715206007  
BONGIORNO JOANN M TR  
3126 TRUENO  
HENDERSON NV 89015

42918123002  
CALIF LAND INV LLC  
PO BOX 1030  
MOJAVE CA 935021030

23703239003  
CALIFORNIA PORTLAND CEMENT CO  
2025 E FINANCIAL WY  
GLEN DORA CA 917414692

42714004004  
CHANG INCOME PROP PTP II LP  
PO BOX 130667  
CARLSBAD CA 920130667

42729205005 **INC**  
CHANG JIM  
G P O BOX 65  
\*

42715108006  
CHAVEZ OSCAR & DAISY  
2519 12TH AV  
LOS ANGELES CA 90018

42730205007  
CHEONG STEPHEN K C & JOAN M C  
19/F 88 TO KWA WAN ROAD  
\*

23704301002  
CITY OF LOS ANGELES D W P  
P O BOX 51111 RM 633  
LOS ANGELES CA 900510100

23704303008 **DUP**  
CITY OF LOS ANGELES D W P  
P O BOX 51111 RM 633  
LOS ANGELES CA 900510100

42917034004  
COMMODITY REFINING EXCHANGE  
116 E PROSPECT AV  
BURBANK CA 91502

42911001000  
CORDOVA FERNANDO & BEATRICE  
TR  
2429 ABADEJO  
LA VERNE CA 917501138

42803014008  
COUNTY OF KERN  
1115 TRUXTUN AV  
BAKERSFIELD CA 93301

23733125002 **DUP**  
COUNTY OF KERN  
1115 TRUXTUN AV  
BAKERSFIELD CA 93301

42818119004 COUNTY OF KERN 1115 TRUXTUN AV FL 3 BAKERSFIELD CA 93301	<b>DUP</b>	42818121009 COUNTY OF KERN 1115 TRUXTUN AV FL 3 BAKERSFIELD CA 93301	<b>DUP</b>	42910103000 COUNTY OF KERN 1115 TRUXTUN AV FLR 3 BAKERSFIELD CA 933014617	<b>DUP</b>
42818101001 COUNTY OF KERN 1115 TRUXTUN AV FLR 3 BAKERSFIELD CA 933014617	<b>DUP</b>	42818123005 COUNTY OF KERN 1115 TRUXTUN AV FLR 3 BAKERSFIELD CA 933014617	<b>DUP</b>	42803029002 COUNTY OF KERN 1115 TRUXTUN AV FLR 3 BAKERSFIELD CA 933014617	<b>DUP</b>
42818120015 COUNTY OF KERN 1115 TRUXTUN AV FLR 5TH BAKERSFIELD CA 933014640	<b>DUP</b>	42911011009 DASHIELLE ALEGRA N TRUST PO BOX 1746 CARSON CITY NV 897021746		23711314000 ELENES NORMA A 680 EVERGREEN LN APT 21 PORT HUENEME CA 930412868	
23733103008 FIVE SPOT LLC 808 TRAVIS ST STE 700 HOUSTON TX 770025774		23733102005 FIVE SPOT LLC 808 TRAVIS ST STE 700 HOUSTON TX 770025774	<b>DUP</b>	42820102009 FOX STEPHEN CRAIG & SCOTT C PO BOX 8083 LA JOLLA CA 920388083	
42911003006 G V H CO 1201 SO OLIVE ST LA CA 90015		42912241003 GARCIA EDILBERTO TORRES 10406 LONE BUTTE RD MOJAVE CA 935017039		24423301009 GENUS L P 2006 HIGHWAY 395 FALLBROOK CA 92028	
42903002000 GENUS L P 2006 HIGHWAY 395 FALLBROOK CA 92028	<b>DUP</b>	42918115009 GOLDEN QUEEN MINING CO LLC PO BOX 1030 MOJAVE CA 935021030		23704312004 GREATER MOJAVE RENEWABLE PWR CO LLC 11512 EL CAMINO REAL STE 370 SAN DIEGO CA 921303025	
23704306007 GREATER MOJAVE RENEWABLE PWR CO LLC 11512 EL CAMINO REAL STE 370 SAN DIEGO CA 921303025	<b>DUP</b>	23704314000 GREATER MOJAVE RENEWABLE PWR CO LLC 11512 EL CAMINO REAL STE 370 SAN DIEGO CA 921303025	<b>DUP</b>	23733217006 HANZMANN ROBERT & ANN MARGARET 28312 KLEVINS CT SANTA CLARITA CA 91387	
42730204004 HENDERSON GERARD D GONZALEZ TABLAS 7 *	<b>INC</b>	23711415000 HERNANDEZ HECTOR ARMANDO 432 W 109TH ST LOS ANGELES CA 900611512		42917012000 HUFFMAN W C P O BOX 965 MOJAVE CA 93501	
42918110004 INGENITO JOSEPH & ANNA M TRUST 22224 SKYLINE DR APPLE VALLEY CA 923088494		42911013005 IPD INC 9819 GLENOAKS BL SUN VALLEY CA 913521016		42730213000 JIM SHING & JIM WONG SOU CHING 4004 WILD POPPY CT MODESTO CA 953568793	
42911012002 JUSTICE DONALD L LIVING TRUST 6154 PLATT AV WOODLAND HILLS CA 913671337		42715201011 KAILIWAI BARNETT TRUST 5604 W AVENUE L1 LANCASTER CA 935364419		42728212002 KLEPZIG H & GERTRUD & JURGEN H LOEWENSTRASSE 29*	<b>INC</b>

42728213005 **INC**  
KLEPZIG HEINZ & GERTRUDE  
\*  
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42901004000  
KLN DUY THAT & LE DANG T  
8582 TELFAIR AV  
SUN VALLEY CA 91352

42729204002 **INC**  
KOCKEL JUERG M  
HOESCHSTR 37  
\*

23704313007  
L A CITY OF  
PO BOX 51111 # 1031  
LOS ANGELES CA 900515700

42714001005  
LANSDALE ARLYNE REV TRUST  
4500 E PACIFIC COAST HW STE 400  
LONG BEACH CA 908043293

42715104004  
LEPPO RANDY M  
1712 BEVIN BROOK DR  
SAN JOSE CA 951126403

42703035002  
LINEALS TANYA K MEYER TRUST  
14116 SE 44TH ST  
BELLEVUE WA 980062334

42731112003  
LOZA BLANCA  
3417 FLORAL DR  
LOS ANGELES CA 90063

42731113006  
LOZA LUIS & ADELINA  
14337 E SNOWDALE ST  
LA PUENTE CA 91746

42902009008  
MACUK SAMUEL & REBECCA  
13561 WOOLSEY WY  
AGUA DULCE CA 913905052

42917017005  
MARIN FEDERICO & BERTHA  
11287 SIERRA HW  
MOJAVE CA 93501

42917016002 **DUP**  
MARIN FEDERICO JR & ROSA EIRKA  
11287 SIERRA HW  
MOJAVE CA 935017026

42901006006  
MASARWEH TONY  
6967 GLENVIEW DR  
SAN JOSE CA 95120

42703029005  
MOJAVE 136 LLC  
9960 W CHEYENNE AV # 212  
LAS VEGAS NV 891297702

42703028002 **DUP**  
MOJAVE 136 LLC  
9960 W CHEYENNE AV # 212  
LAS VEGAS NV 891297702

42803024007 **DUP**  
MOJAVE 189 LLC  
9960 W CHEYENNE AV STE 212  
LAS VEGAS NV 891297703

42803023004 **DUP**  
MOJAVE 189 LLC  
9960 W CHEYENNE AV STE 212  
LAS VEGAS NV 891297703

42803022001 **DUP**  
MOJAVE 189 LLC  
9960 W CHEYENNE AV STE 212  
LAS VEGAS NV 891297703

42803021008 **DUP**  
MOJAVE 189 LLC  
9960 W CHEYENNE AV STE 212  
LAS VEGAS NV 891297703

42803002003  
MOJAVE 729 LAND LLC  
12671 HIGH BLUFF DR STE 150  
SAN DIEGO CA 92130

42803009004 **DUP**  
MOJAVE 729 LAND LLC  
12671 HIGH BLUFF DR STE 150  
SAN DIEGO CA 92130

42902014002  
MOJAVE PACIFIC LTD  
1680 WILLIAMSPORT ST  
HENDERSON NV 890526831

42902016008 **DUP**  
MOJAVE PACIFIC LTD  
1680 WILLIAMSPORT ST  
HENDERSON NV 890526831

42802005009  
MOJAVE PUBLIC UTILITY DIST

23711405001  
MOLINA CANDACE DEANNE  
1270 KENWOOD ST  
LA HABRA CA 90631

23703138003  
MURIEL POLLIA FOUNDATION  
6255 W SUNSET BL # 1520  
LOS ANGELES CA 900287409

42918128007  
NEWMAN GORDON W JR ET AL  
27050 SANTA CLARITA RD  
SAUGUS CA 913501558

24423410002  
O BRIEN SUSAN  
3921 SUNSET LN  
OXNARD CA 930353948

42911004009  
OGDEN BOBBIE G  
5122 W AVE K-10  
LANCASTER CA 93535

42817432009  
PANG SHIOULAN  
1609 SOUTH CAMPBELL  
ALHAMBRA CA 91803

23711404008  
PHILLIPS RONALD L & KAREN  
37517 JORDAN DR  
WILLOUGHBY OH 44094

42728205002  
PRESSMAN BARRY K  
2261 MONACO DR  
OXNARD CA 930352915

42917015009  
PRODUCTS RESEARCH & CHEM  
CORP  
ONE PPG PLACE  
PITTSBURGH PA 15272

42917002001 **DUP**  
PRODUCTS RESEARCH & CHEM  
CORP  
ONE PPG PLACE  
PITTSBURGH PA 15272

42917009002 **DUP**  
PRODUCTS RESEARCH & CHEM  
CORP  
ONE PPG PLACE  
PITTSBURGH PA 15272

42917004007 **DUP**  
PRODUCTS RESEARCH & CHEM  
CORP  
ONE PPG PLACE  
PITTSBURGH PA 15272

42917011007 **DUP**  
PRODUCTS RESEARCH & CHEMICAL  
1 PPG PL  
PITTSBURGH PA 15272

42910214009 **DUP**  
PRODUCTS RESEARCH & CHEMICAL  
ONE PPG PLACE  
PITTSBURGH PA 15272

42703002006  
RE COLUMBIA TWO LANDCO LLC  
300 CALIFORNIA ST FLR 8  
SAN FRANCISCO CA 941041416

42703002006 **DUP**  
RE COLUMBIA TWO LANDCO LLC  
300 CALIFORNIA ST FLR 8  
SAN FRANCISCO CA 941041416

42703002006 **DUP**  
RE COLUMBIA TWO LANDCO LLC  
1906 TOWNE CENTRE BL U 370  
ANNAPOLIS MD 214013685

42703002006 **DUP**  
RE COLUMBIA TWO LANDCO LLC  
1906 TOWNE CENTRE BL U 370  
ANNAPOLIS MD 214013685

23703104004  
RESIDUAL RANCH CORP  
4070 GOLDFINCH ST STE A  
SAN DIEGO CA 921031865

42917013003  
ROGERS SCOTT B & PARTICIA  
11011 SIERRA HW  
MOJAVE CA 93501

42912233000  
SARMIENTO HENRY B & INES E  
10016 LONE BUTTE RD  
MOJAVE CA 935017037

42918109002  
SCHAPPI ERNEST H & JO ANN M  
TRUST  
3332 BRITTANY LN  
LANCASTER CA 935364833

42729213008  
SERRANO FAMILY REVOCABLE  
TRUST  
4839 ROSE DR  
YORBA LINDA CA 928862040

23705510005  
SOLAR HUB PV LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23703238000  
SOU CAL EDISON CO  
14799 CHESTNUT ST  
WESTMINSTER CA 926835240

42713002005  
SOUTHWESTERN REFINING CORP  
700 BUENOS TIEMPOS DR  
CAMARILLO CA 93012

42728204009  
TAM TONY PUI SANG  
21324 E FORT BOWIE DR  
WALNUT CA 917895104

23711313007  
TG TEHACHAPI LAND HOLDINGS  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711406004 **DUP**  
TG TEHACHAPI LAND HOLDINGS  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42901002004  
THOMPSON MARK E A P C PROFIT  
SHARING PLAN  
857 W LANCASTER BL  
LANCASTER CA 93534

24425007002 **SITE**  
U S A  
450 GOLDEN GATE AVENUE  
SAN FRANCISCO, CA 94102

24425008005 **SITE/DUP**  
U S A  
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43001104007 **SITE/DUP**  
U S A  
\*  
\*

42713011001 **INC**  
U S A  
\*  
\*

24425001004 **INC**  
U S A  
\*  
\*

42702036002  
UNION PACIFIC R/R CO  
1400 DOUGLAS ST  
OMAHA NE 68179

23719204008 **DUP**  
UNION PACIFIC R/R CO  
1400 DOUGLAS ST # 1610  
OMAHA NE 681791610

42918127004  
VALENCIA VICENTE ANTONIO  
14915 BERG ST  
SYLMAR CA 91342

42729212005  
VIDA USA  
333 BUSH ST STE 2020  
SAN FRANCISCO CA 941042864

23704302005  
VIOLE FAMILY LLC  
241 S WINDSOR BL  
LOS ANGELES CA 90004

42817433002  
WESTERN NATURAL RESOURCES  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42715101005 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711315003 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711407007 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42702027006 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711416003 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025  
**DUP**

23733211008 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23733218009 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711403005  
WESTERN NATURAL RESOURCES  
LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42817417006 **DUP**  
WESTERN NATURAL RESOURCES  
LLC  
11455 EL CAMINO REAL STE 160  
SAN DIEGO CA 921302047

23711410005 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42817429001 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42817418009 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

42820116000 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL STE 370  
SAN DIEGO CA 921303025

23711409003 **DUP**  
WESTN NATURAL RESOURCES LLC  
11455 EL CAMINO REAL STE 160  
SAN DIEGO CA 921302047

23711316006 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL E370  
SAN DIEGO CA 921303025

42904205006 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL STE 70  
SAN DIEGO CA 921303024

42915219009 **DUP**  
WESTN NATURAL RESOURCES LLC  
11512 EL CAMINO REAL # 370  
SAN DIEGO CA 921303025

23733126005 **INC**  
WINDSTAR ENERGY LLC  
1326-855 W GEORGIA ST  
\*

23733126005  
WINDSTAR ENERGY LLC  
200 DONALD LYNCH BL STE 300  
MARLBOROUGH MA 017524816

42714003001  
WONG SIU YUNG  
435 W GRAVES AV  
MONTEREY PARK CA 917543822

42715204001  
WOODCLIFF INC  
19313 STARLIGHT DR  
TARZANA CA 91356

42910131001  
WOOLSEY ROY B TRUST  
26649 SNELL LN  
LOS ALTOS HILLS CA 940222039

42910130008 **DUP**  
WOOLSEY ROY B TRUST  
26649 SNELL LN  
LOS ALTOS HILLS CA 940222039

42910133007 **DUP**  
WOOLSEY ROY B TRUST  
26649 SNELL LN  
LOS ALTOS HLS CA 94022

42910132004 **DUP**  
WOOLSEY ROY B TRUST  
26649 SNELL LN  
LOS ALTOS HLS CA 94022



# 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

<b>SCH #</b> 2017111079
-------------------------

**Project Title:** EIR JKM 07-17; Edwards Air Force Base Solar Project by Edwards AFB Solar, LLC.  
**Lead Agency:** Kern County Planning Department **Contact Person:** Janice Mayes  
**Mailing Address:** 2700 "M" Street Suite 100 **Phone:** (661) 862-8793  
**City:** Bakersfield **Zip:** 93301-2323 **County:** Kern

**Project Location:** County: Kern City/Nearest Community: Rosamond, City of Mojave  
Cross Streets: Trotter Avenue and Lone Butte Road Zip Code: N/A  
Lat. / Long.: 34° 58' 0" N / 118° 8' 27" W Total Acres: 6,000  
Assessor's Parcel No.: Edwards AFB -Multiple Section: Multiple Twn: 10 & 11N Range: 11;12; & 13W Base: SBB&M  
Within 2 Miles: State Hwy #: SR 14 Waterways: N/A  
Airports: N/A Railways: N/A Schools: N/A

### Document Type:

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

### Local Action Type:

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

### Development Type:

Residential: Units \_\_\_\_\_ Acres \_\_\_\_\_  Water Facilities: Type \_\_\_\_\_ MGD \_\_\_\_\_  
 Office: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Transportation: Type \_\_\_\_\_  
 Commercial: Sq.ft. \_\_\_\_\_ Acres 3,500 Employees 10 perm.  Mining: Mineral \_\_\_\_\_  
 Industrial: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Power: Type Solar PV MW up to 600  
 Educational \_\_\_\_\_  Waste Treatment: Type \_\_\_\_\_ MGD \_\_\_\_\_  
 Recreational \_\_\_\_\_  Hazardous Waste: Type \_\_\_\_\_  
 Other: \_\_\_\_\_

### Project Issues Discussed in Document:

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

### Present Land Use/Zoning/General Plan Designation:

Undeveloped EAFB Land. Zoning: A-1 (Limited Agriculture); Kern County General Plan: 1.1 (State and Federal Land); Franchise Agreement land: Multiple zoning and designations within multiple general and specific plans (see NOP details attached)

**Project Description:** (please use a separate page if necessary) The project proponent is requesting: (a) a Franchise Agreement with the County of Kern to facilitate the construction, and operation of an up to 3,500 acres 600 MW solar facility. The project would be supported by a 230-kV overhead/underground transmission corridor. The transmission line would generally be aligned from the north/south and then east/west where it ultimately would be connected to the existing privately-owned Westwind Substation in the first phase of the project and then to the SCE Whirlwind Substation in subsequent phases of the project. The project's permanent facilities would include up to 2 million solar panels, service roads, security fencing, a power collection system, battery storage, communication cables, overhead and underground transmission lines, electrical switchyards, a substation, and an operations and maintenance facility.

Reviewing Agencies Checklist

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

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

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

Starting Date June 7, 2019 Ending Date July 26, 2019

-----  
**Lead Agency (Complete if applicable):**

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

-----  
**Signature of Lead Agency Representative:** \_\_\_\_\_ **Date:** 6/07/19

**Draft**  
**Environmental Impact Statement /**  
**Environmental Impact Report for the**  
**Edwards AFB Solar Project**

**SCH# 2017111079**

***Edwards AFB Solar Project***  
**(PP18136)**

Kern County Planning and Natural Resources Department  
Public Services Building  
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Bakersfield, CA 93301-2370  
(661) 862-8600

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120 N. Rosamond Blvd.  
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*Technical Assistance by:*  
ESA  
626 Wilshire Boulevard, Suite 1100  
Los Angeles, CA 90017  
(213) 599-4300

June 2019

Abstract: The Air Force Proposed Action is to lease land to a developer for the construction, operation, and maintenance of a solar photovoltaic (PV) renewable energy project (proposed project or Proposed Action) at Edwards AFB. The final scale of the Proposed Action is anticipated to be greater than 100 MW but not more than 750 MW, with the generated energy distributed to investor owned utilities, municipalities, other energy off-takers and/or Edwards AFB. The construction scale of such a proposed project would require a lease and development of up to 4,000 acres of non-excess land at Edwards AFB.

## **PRIVACY ADVISORY**

This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions.

Letters or other written or oral comments provided may be published in the EIS. As required by law, comments provided will be addressed in the EIS and made available to the public. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the EIS or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EIS. However, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.



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# EXECUTIVE SUMMARY

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## ES.1 Introduction

This Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) is a joint document published by the U.S. Air Force (Air Force, or USAF) and the County of Kern, California (County). The Air Force is the lead agency pursuant to the National Environmental Policy Act (NEPA). The County is a cooperating agency pursuant to 40 Code of Federal Regulations (CFR) Section 1501.6 and the California Environmental Quality Act (CEQA) lead agency pursuant to Section 15051 of the guidelines for implementing the CEQA. This document provides information needed by the Air Force and County to make a determination on whether or not to implement a solar project on the 4,000-acre Edwards Air Force Base (AFB) property and on the generation tie (gen-tie) line approximately 16 miles in length. This EIS/EIR provides information needed by the USAF and County to make a determination on whether or not to implement a solar project on the 4,000-acre Edwards AFB property (the Proposed Action). This EIS/EIR analysis evaluates at a project level the impacts of the Edwards AFB Solar Project (herein identified as the proposed project or Proposed Action).

The Air Force Proposed Action is to lease land to a developer for the construction, operation, and maintenance of a solar photovoltaic (PV) renewable energy project (proposed project or Proposed Action) at Edwards AFB. The final scale of the Proposed Action is anticipated to be greater than 100 megawatts (MW) but not more than 750 MW, with the generated energy distributed to investor owned utilities, municipalities, other energy off-takers and/or Edwards AFB. The construction scale of such a proposed project would require a lease and development of up to 4,000 acres of non-excess land at Edwards AFB.

The proposed solar facility would be located on Edwards AFB, approximately 6 miles northeast of the community of Rosamond and 6 miles south of Mojave, in southeastern Kern County, California (**Figure ES-1**).

Therefore, pursuant to the Air Force's Environmental Impact Analysis Process (EIAP) regulation, 32 CFR Part 989., which implements the NEPA process, and the state's CEQA guidelines (Public Resources Code Section 2100 et seq and California Code of regulations, Title 14, Section 15000 et seq), the Air Force and County are preparing this EIS/EIR to inform the public and other interested entities of the Proposed Action and alternatives and seek their comments. This EIS/EIR process is intended to provide opportunities for public involvement to better assess the Proposed Action's and alternatives' impacts to the human and natural environment. The resulting information will be considered by the Air Force to achieve a Final EIS/EIR to allow informed decision-making on whether or how to proceed with the Proposed Action and alternatives. Additionally, the County will consider the information in its determination of whether to authorize the franchise agreement. Finally, this documented information may also be considered by other governmental or regulatory agencies associated with any required consultations and/or permits for this Proposed Action and alternatives.

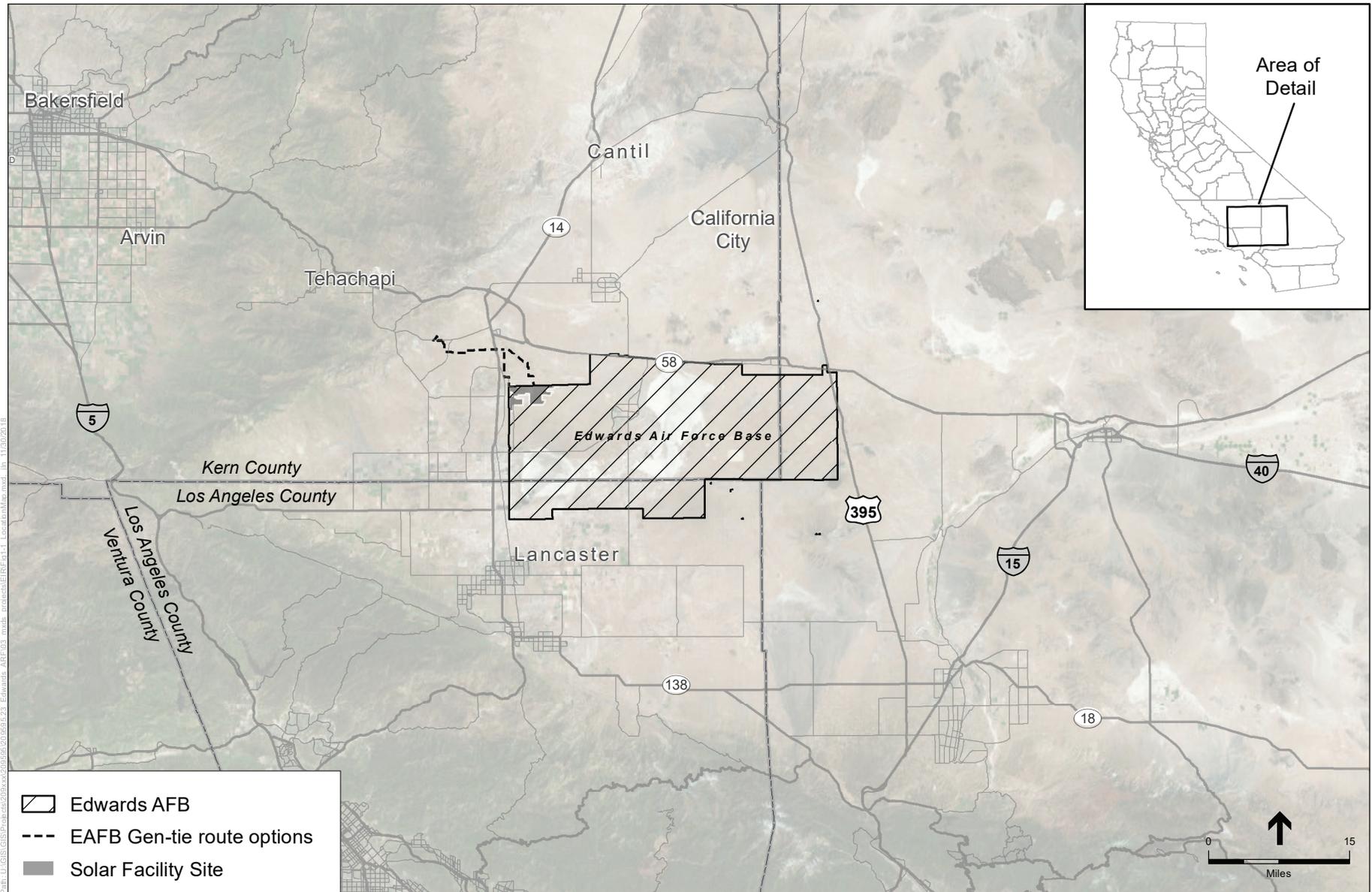


Figure ES-1: PROJECT VICINITY

## 1 ES.2 Background

2 The mission of the Air Force is to fly, fight, and win in air, space and cyberspace. The 412th Test  
3 Wing is the host wing for Edwards AFB, California. The 412th Test Wing plans, conducts,  
4 analyzes, and reports on all flight and ground testing of aircraft, weapons systems, software, and  
5 components as well as modeling and simulation for the Air Force. The wing oversees day-to-day  
6 base operations and provides support for over 10,000 military, federal civilian, and contract  
7 personnel assigned to Edwards AFB.

8 In 2007 the Air Force Real Property Agency (AFRPA) now known as Air Force Civil Engineer  
9 Center/Installations Directorate (AFCEC/CI) completed a comprehensive analysis of the available  
10 lands on Air Force bases and their potential to support renewable energy development through the  
11 Enhanced Use Lease (EUL) program (*Renewable Energy Enhanced Use Lease Opportunity  
12 Summary Report*; AFRPA, 2007). The EUL program allows the Air Force to lease underutilized,  
13 non-excess lands to a third party that would generate monetary or in-kind consideration to the Air  
14 Force while also optimizing the value and utility of these lands under authority granted by 10 U.S.  
15 Code (USC) Section 2667. The Air Force may lease non-excess land to third parties under specified  
16 conditions for the fair market value of the leasehold interest. Results of the 2007 analysis showed  
17 that Edwards AFB possessed considerable acreage of non-excess Air Force property that could be  
18 more fully utilized through the EUL program. The study found that approximately 6,000 acres of  
19 land in the northwest corner of Edwards AFB was suitable for renewable energy development, and  
20 had high potential and a market to support a solar energy project (AFRPA, 2007). The report  
21 concluded that development of renewable solar energy at Edwards AFB would support the  
22 Department of Defense (DoD) and Air Force renewable energy goals and achieve other value that  
23 would support base operations and maintenance projects.

24 In 2011, SunEdison LLC proposed development of the Oro Verde Solar Project on the  
25 approximately 6,000-acre EUL property site in the same project area currently proposed in this EIS  
26 for the Edwards AFB Solar Project. SunEdison submitted development applications to the Air  
27 Force and County and conducted several technical environmental analyses to support those  
28 applications. The Air Force and County initiated NEPA and CEQA scoping processes in May 2013.  
29 Public scoping meetings were conducted in June 2013. In late 2014, SunEdison LLC stopped  
30 development of the project.

31 Upon termination of the agreement with SunEdison, LLC, the Air Force did not have an agreement  
32 in place with an energy developer and therefore revised the environmental impact analysis for the  
33 project from a site-specific analysis to a broader programmatic level of analysis to support future  
34 project planning. In June 2016, the Air Force released an updated Notice of Intent to describe this  
35 change.

36 In December 2016, the Air Force released a new Request for Qualifications for solar development  
37 through the EUL program. In 2017, private offerors submitted proposals to Edwards AFB to  
38 construct, operate, and maintain a utility-scale solar PV energy-generating facility. Edwards AFB  
39 property would be developed under the terms of a site development lease on up to 4,000 acres of  
40 non-excess real property under the control of the Secretary of the Air Force. A developer was  
41 selected by the Air Force and filed an application with the County for a franchise agreement for

1 routing a gen-tie transmission line from the proposed solar facility to the SCE Windhub Substation  
2 and/or the privately owned Westwind Substation.

3 In November 2017, the Air Force published a new Notice of Intent to prepare a project-level  
4 EIS/EIR to once again propose and evaluate the environmental impacts of a specific project. The  
5 solar facility proposed under the current Proposed Action has the same general design and  
6 components as the former Oro Verde Solar Project proposed in 2013, and the proposed solar array  
7 continues to be sited around sensitive environmental features to reduce impacts. The gen-tie route  
8 options associated with the Proposed Action follow different alignments than those proposed for  
9 the former Oro Verde Solar Project. Because existing conditions at the site and immediately  
10 surrounding areas have not changed substantially since 2013, several of the technical environmental  
11 analyses that were prepared for the Oro Verde Solar Project have been used in the evaluation of  
12 environmental impacts of the Proposed Action. As described in further detail in Chapter 3,  
13 *Environmental Setting and Environmental Consequences*, where appropriate, additional and/or  
14 updated data has been provided to verify the applicability of the former analyses to the current  
15 Proposed Action. Additionally, new technical analyses have been conducted for the Proposed  
16 Action gen-tie alignment options.

## 17 **ES.3 Purpose and Need**

### 18 **ES.3.1 NEPA**

19 The purpose of the Proposed Action is to meet Air Force objectives to optimize the value of  
20 non-excess lands at Edwards AFB by leasing property for renewable energy development in  
21 accordance with 10 USC Section 2667 and to promote the efficient and economical use of real  
22 property assets at Edwards AFB in accordance with Executive Order (EO) 13327, Federal Real  
23 Property Asset Management. Pursuing an EUL renewable energy development would support the  
24 Air Force's requirements to meet federal renewable energy mandates while supporting efforts to  
25 achieve DoD and Air Force goals for renewable energy generation on DoD lands to enhance energy  
26 conservation, availability, and efficiencies and also reduce greenhouse gas (GHG) levels. Edwards  
27 AFB identified several thousand acres of non-excess lands it could lease at fair market value that  
28 would achieve a higher and better land use through development of a renewable solar energy  
29 project.

30 DoD leasing tools such as 10 USC Section 2667, *Leases: Non-Excess Property of Military*  
31 *Departments and Defense Agencies*, allow the Air Force, through its EUL program, to lease  
32 non-excess real property for terms that promote the national defense or are in the public interest. In  
33 seeking solar energy development, Edwards AFB is also pursuing objectives outlined in the  
34 February 14, 2007, Department of the Air Force memorandum titled *Pursuing "Value-Based"*  
35 *Transactions Involving Air Force Real Property Assets*. This memorandum defines organizational  
36 responsibilities for Air Force organizations to optimize the value of real property assets using  
37 authorized tools such as the EUL program.

38 Additionally, the Air Force has continued to develop and refine its energy program and goals for  
39 increased energy efficiency and renewable energy production on its bases. On January 6, 2017, the  
40 Air Force released their Energy Flight Plan, 2017–2036. Goals within the energy strategy include  
41 monetizing non-excess assets such as land in return for consideration that advances energy

1 resiliency objectives. Development of the proposed project will help the Air Force to meet the goal  
2 of optimizing the value of non-excess property while supporting Air Force energy goals. The Air  
3 Force is also working to achieve reductions of GHG emissions through energy conservation,  
4 increased energy efficiencies of its facilities, and increased consumption of its energy needs from  
5 renewable energy sources. Implementation of the Proposed Action would minimize global GHG  
6 emissions by producing energy from renewable, non-carbon-based sources instead of promoting  
7 the consumption of energy derived from fossil fuels. The proposal of leasing Air Force land for  
8 development of the Proposed Action would produce a new renewable energy source beneficial to  
9 the state and the public and would support the achievement of established federal, DoD, and Air  
10 Force energy mandates and goals.

11 Currently, Edwards AFB facilities must be renovated, or in some cases outdated facilities may need  
12 to be demolished in order to reduce energy consumption and increase energy efficiency in  
13 accordance with 10 USC Section 2911. Lease consideration received in return for the fair market  
14 value of leased land would additionally provide Edwards AFB with the ability to implement  
15 installation projects to support its own sustainable energy efficiencies, conservation, and reduced  
16 GHG emissions goals. In accordance with a policy memorandum issued from the Undersecretary  
17 of Defense (Installations and Environment), at least 50 percent of the lease consideration generated  
18 from the EUL would be used for improving energy conservation (OSD, November 2012).  
19 Therefore, development of the Proposed Action on land leased by Edwards AFB would support  
20 successful achievement of its sustainable renewable energy goals while also optimizing the use of  
21 non-excess Air Force property in a manner consistent with national defense and public interests.

22 The Air Force need includes meeting the following objectives:

- 23 • Evaluate renewable energy projects on non-excess Air Force real property that would  
24 promote the efficient and economic use of federal real property under EO 13327, Federal  
25 Real Property Management and Air Force policy guidance (Air Force Policy  
26 Memorandum, February, 2007).
- 27 • Support attainment of federal, DoD, and Air Force energy and facilities mandates and goals  
28 including 10 USC Section 2911 and the Energy Flight Plan 2017-2036 (Air Force, January  
29 2017) supporting utility-scale projects that increase renewable energy capacity and its  
30 distribution.

### 31 ES.3.2 CEQA

32 As a cooperating agency, the County's purpose is to ensure the Proposed Action or alternatives are  
33 implemented in a manner consistent with the County's General Plan and Mojave Specific Plan,  
34 Soledad Mountain-Elephant Butte Specific Plan, West Edwards Road Settlement Specific Plan,  
35 and the Actis Interim Rural Community Plan. These plans prescribe land use designations and  
36 transportation plans in the area potentially affected by the Proposed Action, and are implemented  
37 through standards described within the Kern County Zoning Ordinance. The County is also  
38 responsible for regulating public utilities within public rights-of-way (ROWs) through the approval  
39 of franchise agreements. Franchise agreements are discretionary actions, and as such are required  
40 to comply with CEQA. The franchise agreement would permit the construction of portions of the  
41 gen-tie line within public and private ROW between the proposed Edwards AFB leased site to the

1 point of interconnection (off Edwards AFB) of the generated renewable energy or power that is  
2 managed by public utilities under California Public Utilities Commission (CPUC) regulations.

### 3 **ES.4 Project Objectives**

4 CEQA requires a statement of project specific objectives (Section 15124 of the CEQA Guidelines).

5 The following are the objectives for the Proposed Action:

- 6 • Establish a solar PV generating facility greater than 100 MW in order to assist the state of  
7 California in achieving the Renewable Portfolio Standard (RPS) for 2030, by providing a  
8 significant new source of renewable energy (California State Assembly Bill [AB] 32,  
9 Senate Bill [SB] 1078, SB 107, SB 350, and SB 2).
- 10 • Supply clean, safe, renewable energy.
- 11 • Produce and transmit electricity at a competitive cost and in a manner that is eligible for  
12 commercial financing.
- 13 • Use technology that is available, proven, efficient, easily maintained, recyclable, and  
14 environmentally sound.
- 15 • Support the economic development of Kern County, Los Angeles County, and the State of  
16 California.
- 17 • Enhance existing electrical distribution infrastructure and provide greater support to  
18 existing and future customer loads.
- 19 • Minimize environmental effects by:
  - 20 ○ Using existing electrical distribution facilities, ROW, roads, and other existing  
21 infrastructure, where practicable
  - 22 ○ Minimizing impacts on threatened and/or endangered species
  - 23 ○ Minimizing water use; and
  - 24 ○ Reducing GHG emissions.
- 25 • Advance Department of Defense energy resilience and security goals by optimizing the  
26 value of under-utilized Air Force real property assets consistent with Department of  
27 Defense Instruction 4170.11, Installation Energy Management and the Air Force Energy  
28 Flight Plan, 2017–2036.

### 29 **ES.5 Proposed Action and Alternatives**

#### 30 **ES.5.1 Comparison of Alternatives**

31 Each of the following alternatives (except Alternative D) is described in detail in Chapters 2 and 4.  
32 Alternative D is not included in Chapter 2 because it not considered to be a feasible NEPA  
33 Alternative for meeting the Purpose and Need of the Air Force but Alternative D was retained for  
34 analysis as a CEQA Alternative and is described in Chapter 4.

1 **Alternative A: Proposed Action (4,000-Acre EUL).** The Proposed Action, or the Air Force  
2 Preferred Alternative, would consist of the construction, operation, and decommissioning of a PV  
3 facility of greater than 100 MW of energy on up to a maximum of 4,000 acres of undeveloped, non-  
4 excess real property on the project site in the northwest corner of Edwards AFB. The Proposed  
5 Action would also consist of the construction of an associated gen-tie line approximately 16 miles  
6 in length (see **Figure ES-2**). The site plan for this alternative is shown on **Figure ES-3**.

7 **Alternative B: Reduced Project (1,500-Acre EUL).** This alternative would consist of the  
8 construction, operation, and decommissioning of a utility-scale PV solar facility on up to a  
9 maximum of 1,500 acres of non-excess real property located within the project site. Alternative B  
10 would involve construction using the same technology and components described for  
11 Alternative A. This alternative would use the same gen-tie line route proposed in Alternative A  
12 (see Figure ES-2) The reduced project alternative would require less acreage and therefore reduce  
13 all construction-related ground disturbance required to support the full project alternative described  
14 in Alternative A. The site plan for this alternative can be found in **Figure ES-4**.

15 **Alternative C: No Action/No Project.** Under Alternative C, the proposed EUL action and solar  
16 array development would not occur. This alternative would not include any development on the  
17 project site. Base operations at Edwards AFB would continue without the benefit of the EUL or  
18 lease consideration. Non-excess lands would not be utilized. Project-related reductions in GHG  
19 emissions would not occur, nor would the Air Force assist the County or state of California in  
20 attainment of RPS. This alternative would avoid all significant impacts. However, it would not  
21 meet the Purpose and Need of the Air Force. The No Action/No Project alternative serves as a  
22 baseline from which to evaluate environmental impacts of the alternatives under NEPA.

23 **Alternative D: No Ground-Mounted Utility-Solar Development – Distributed Commercial  
24 and Industrial Rooftop Solar Only.** This alternative would consist of the construction of the same  
25 amount of PV solar electricity as the proposed project. Rather than in the project site boundary, PV  
26 solar panels would be distributed on rooftops throughout the region. This alternative would avoid  
27 a EUL, Conditional Use Permit (CUP) and franchise agreement for the project site, but may require  
28 other entitlements (such as a CUP or variance) on other sites. As compared to Alternative A, this  
29 alternative would avoid direct significant impacts to aesthetics, air quality, and cultural resources.  
30 It would potentially reduce construction related impacts on biological resources, water use, and  
31 traffic.

## 32 ES.5.2 Lead Agency Preferred Alternative

33 Under NEPA, the “preferred alternative” is a preliminary indication of the lead agency’s preference  
34 of action among the Proposed Action and alternatives. A NEPA lead agency may select a preferred  
35 alternative for a variety of reasons, including the agency’s priorities, in addition to the  
36 environmental considerations discussed in the EIS. In accordance with NEPA (40 CFR 1502.14(e)),  
37 the Air Force preliminarily has identified Alternative A, the Proposed Action, as the preferred  
38 alternative.

39

40

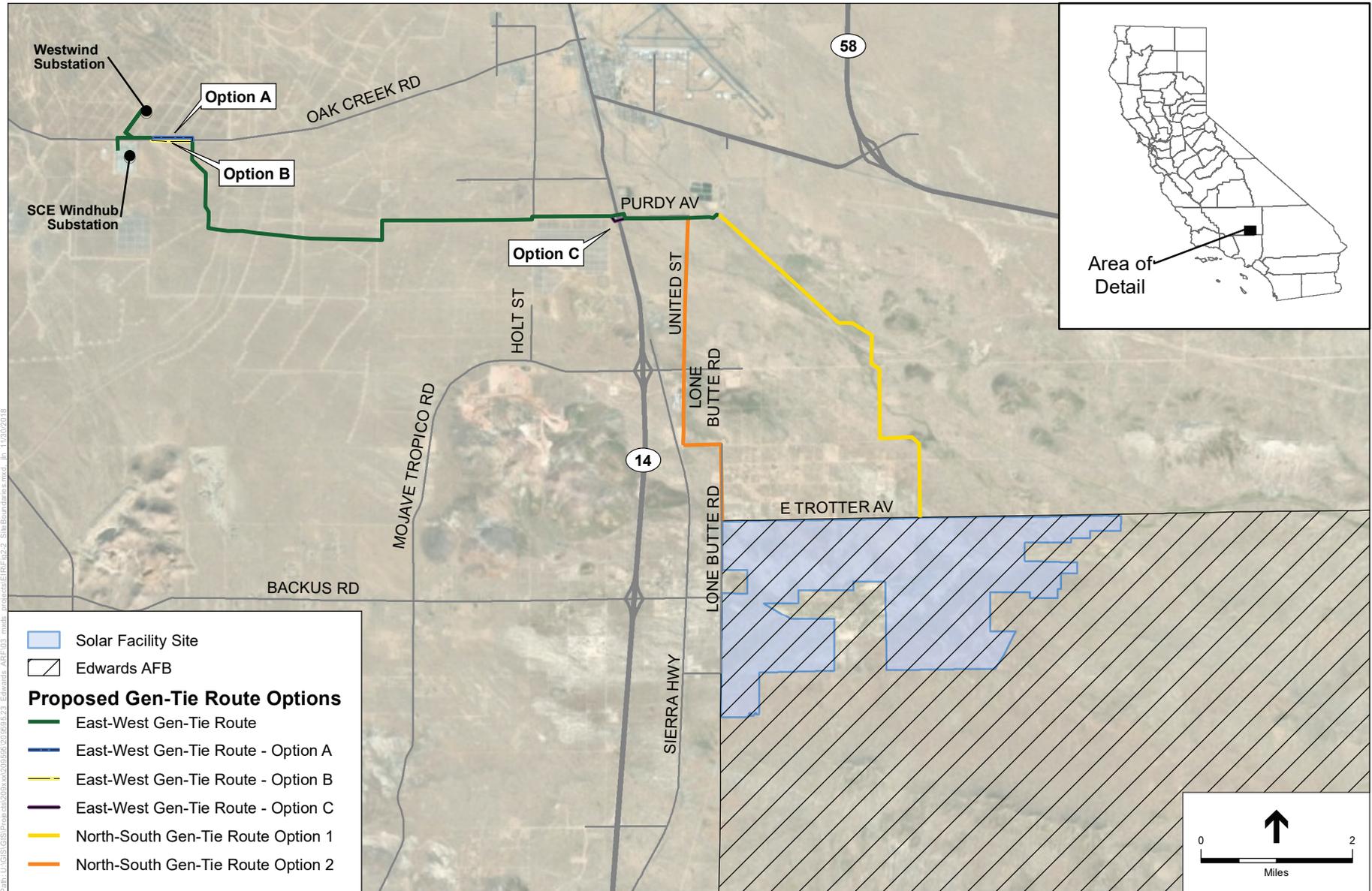


Figure ES-2: SITE BOUNDARIES

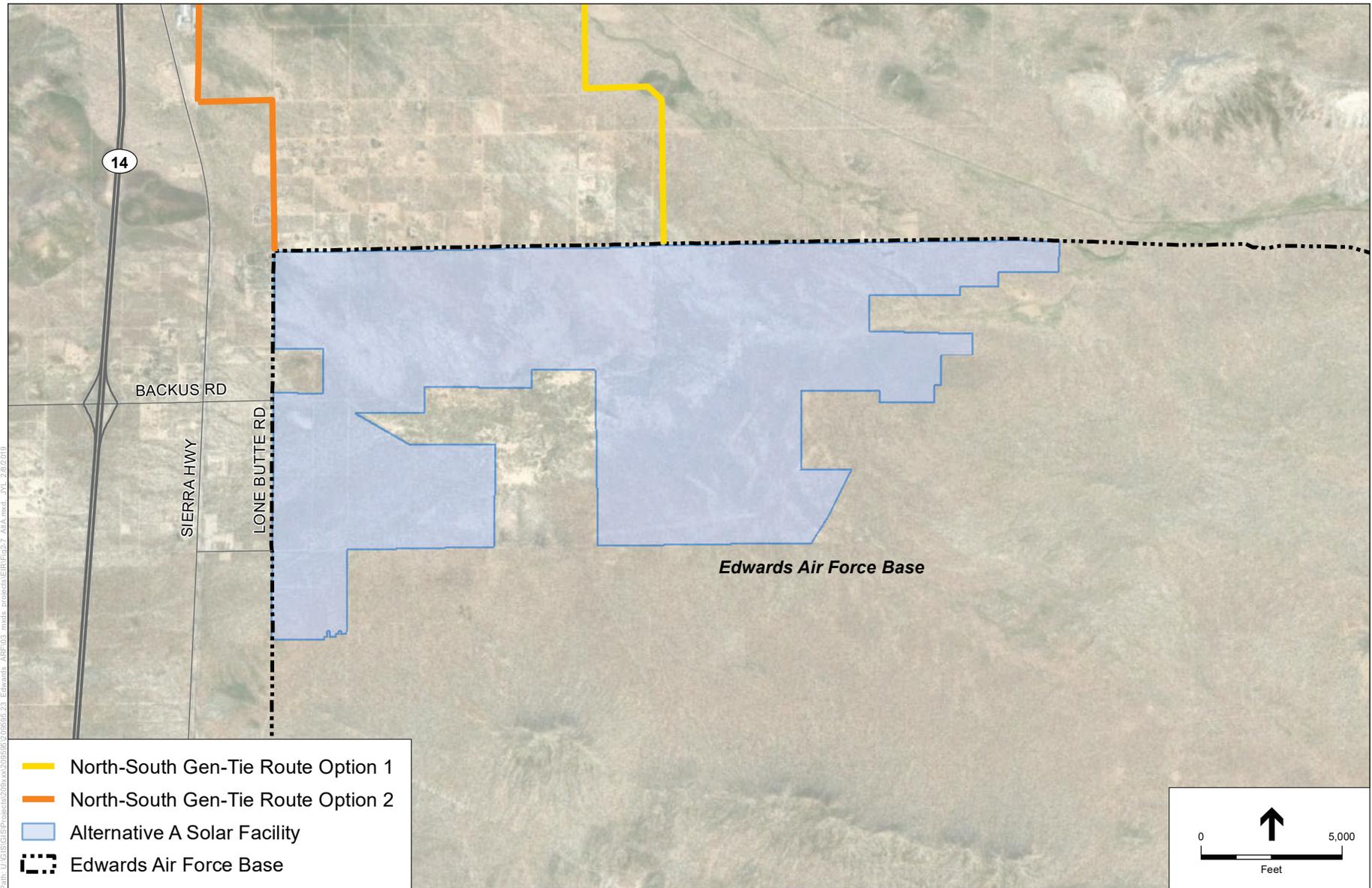


Figure ES-3: ALTERNATIVE A SITE PLAN

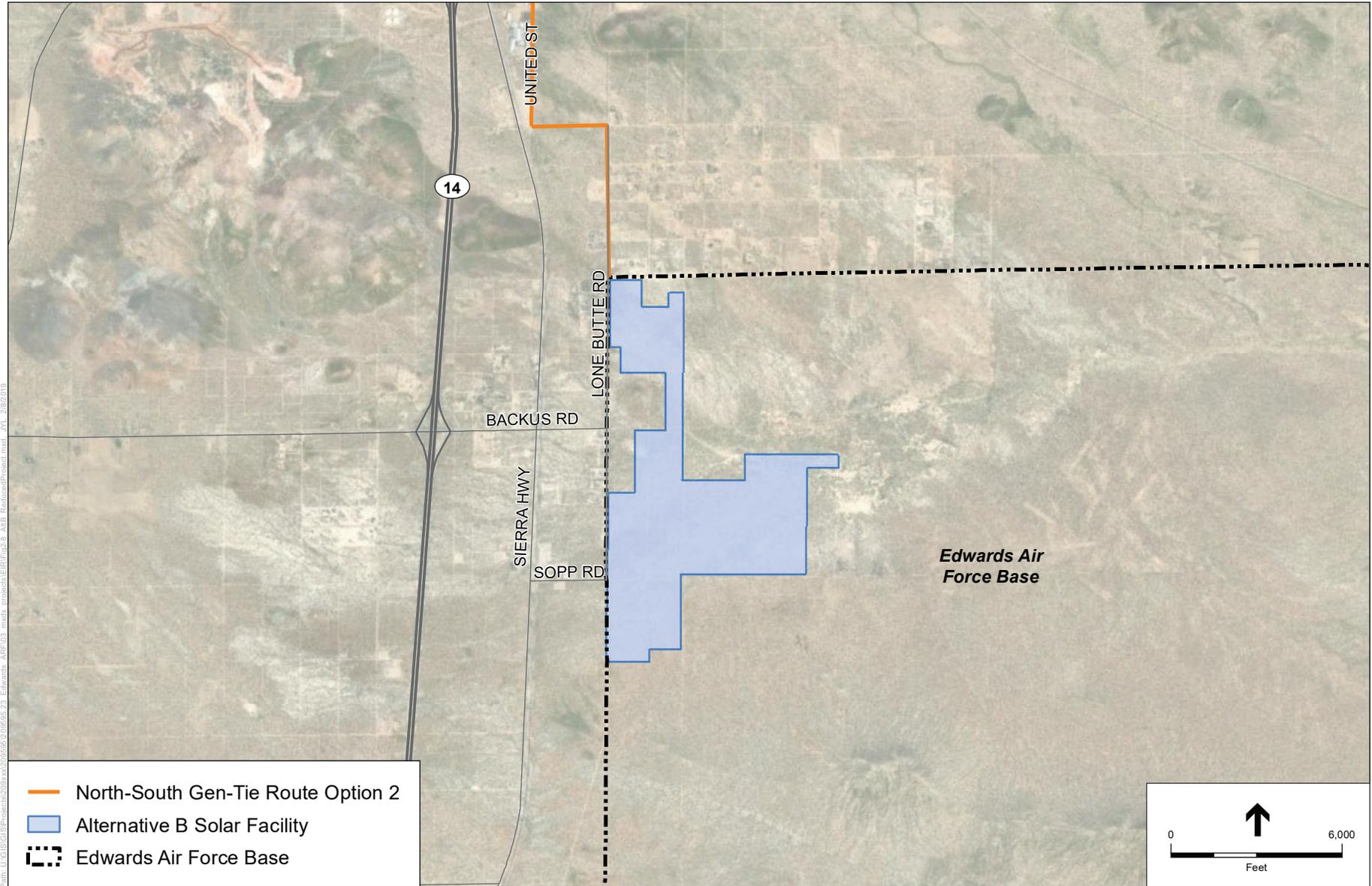


FIGURE ES-4: ALTERNATIVE B REDUCED PROJECT BUILD-OUT

1 CEQA Guidelines Section 15126.6(e) (2) requires an EIR to identify an environmentally superior  
 2 alternative. If the environmentally superior alternative is the No Project Alternative, the EIR also  
 3 must identify an environmentally superior alternative from among the other alternatives. In general,  
 4 the environmentally superior alternative is defined as that alternative with the least adverse impacts  
 5 to the project area and its surrounding environment.

## 6 **ES.6 Environmental Impacts**

### 7 **ES.6.1 Impacts Not Further Considered in This EIS/EIR**

8 Environmental issues not present in the project area or not affected by the alternatives include:

- 9 • Population and Housing
- 10 • Recreation

11 **Population and Housing.** As discussed in Appendix A1 (Notice of Preparation/Initial Study),  
 12 because construction of the proposed project would be temporary and short term and operation of  
 13 the project would require a relatively small number of people (10), it was determined that the  
 14 proposed project would not have the potential to result in population growth that would result in  
 15 the need for construction of new homes, displacement of existing housing, or displacement of  
 16 substantial numbers of people. Therefore, this issue is not analyzed in this EIS/EIR.

17 **Recreation.** As discussed in Appendix A1, the temporary increase of population during  
 18 construction that might be caused by an influx of workers would be minimal and would not result  
 19 in a detectable increase in the use of parks or other recreational facilities. Therefore, this issue is  
 20 not analyzed in this EIS/EIR.

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

- Aesthetics
- Agricultural Resources
- Air Quality
- Airspace Management and Use
- Biological Resources
- Cultural and Paleontological Resources
- Geology, Minerals, and Soils
- Greenhouse Gas Emissions
- Hazardous Materials and Safety
- Infrastructure
- Land Use
- Noise
- Public Services
- Socioeconomics and Environmental Justice
- Transportation
- Tribal Resources
- Hydrology and Water Quality

## ES.6.2 Impacts of the Proposed Project

### ES.6.2.1 Less-than-Significant Impacts (Including Significant Impacts that Can Be Mitigated, Avoided, or Substantially Lessened)

**Table ES-1** presents those resources for which impacts of the project were determined to be less than significant. Less-than-significant cumulative impacts are also included in this table. Sections 3.1 through 3.16 of this EIS/EIR present detailed analysis of these impacts and describe the means by which the mitigation measures listed in Table ES-1 would reduce impacts to a less than significant level. With respect to federal NEPA regulations, cumulative impacts (effects) are defined in 40 CFR Section 1508.7 by the Council on Environmental Quality (CEQ).

**TABLE ES-1  
SUMMARY OF PROPOSED PROJECT IMPACTS THAT ARE LESS THAN SIGNIFICANT OR  
LESS THAN SIGNIFICANT WITH MITIGATION**

<b>Impact</b>	<b>Mitigation Measures</b>
Aesthetics	MM 3.1-1a through MM 3.1-3a, MM 3.1-1b through MM 3.1-3b, and MM 3.5-4a
Agricultural Resources (Project and Cumulative)	None required
Air Quality	MM 3.3-1a through MM 3.3-10a and MM3.3-1b through MM3.3-8b
Airspace Management and Use (Project and Cumulative)	MM 3.4-1a, MM 3.4-2a, and MM 3.4-1b
Biological Resources (Project and Cumulative)	MM 3.5-1a through MM 3.5-13a and MM 3.5-1b through 3.5-15b
Cultural & Paleontological Resources	MM 3.6-1a through MM 3.6-10a and MM 3.6-1b through MM 3.6-8b
Geology and Soils (Project and Cumulative)	MM 3.7-1a, MM 3.7-2a, and MM 3.7-1b through MM 3.7-4b
Greenhouse Gas Emissions (Project and Cumulative)	MM 3.3-1b through MM 3.3-6b
Hazardous Materials and Safety (Project and Cumulative)	MM 3.9-1a through MM 3.9-6a and MM 3.9-1b through MM 3.9-8b
Infrastructure (Project and Cumulative)	MM 3.10-1a, MM 3.10-1b, MM 3.10-2a, MM 3.10-2b, MM 3.11-1a, MM 3.11-1b, MM 3.16-3a, and MM 3.16-3b
Land Use (Project and Cumulative)	MM 3.11-1a and MM 3.11-1b
Noise (Project and Cumulative)	MM 3.12-1a, MM 3.12-2a, MM 3.12-1b, and MM 3.12-2b
Public Services (Project and Cumulative)	MM 3.13-1a, MM 3.13-1b, MM 3.9-6a, and MM 3.9-8b
Socioeconomics and Environmental Justice	None Required
Transportation (Project and Cumulative)	MM 3.15-1a, MM 3.15-1b, and MM 3.15-2b
Tribal Cultural Resources (Project and Cumulative)	None required
Water Resources (Project and Cumulative)	MM 3.9-1a, MM 3.9-1b, MM 3.16-1a, MM 3.16-1b, MM 3.16-2a, MM 3.16-2b, MM 3.16-3a, MM 3.16-3b, MM 3.16-4a, MM 3.16-4b, MM 3.16-5a, and MM 3.16-5b

## 1 ES.6.2.2 Significant and Unavoidable Impacts

2 **Table ES-2** presents those impacts of the proposed project that are significant and unavoidable  
 3 even with the implementation of mitigation measures. As stated above, this EIS/EIR presents a  
 4 detailed analysis of these impacts and describes the means by which the mitigation measures, listed  
 5 in Table ES-2, would reduce the severity of impacts to the extent feasible.

6 **TABLE ES-2**  
 7 **SUMMARY OF PROPOSED PROJECT IMPACTS THAT ARE SIGNIFICANT AND UNAVOIDABLE**

Impact	Mitigation Measures
Aesthetics (Project and Cumulative)	MM 3.1-1a through MM 3.1-3a, MM 3.1-1b through MM 3.1-3b, and MM 3.5-4a
Air Quality (Project and Cumulative)	MM 3.3-1a through MM 3.3-10a and MM3.3-1b through MM3.3-8b

## 8 ES.6.2.3 Significant Cumulative Impacts

9 According to Section 15355 of the CEQA Guidelines, the term cumulative impacts “...refers to two  
 10 or more individual effects which, when considered together, are considerable or which compound  
 11 or increase other environmental impacts.” With respect to federal NEPA regulations, cumulative  
 12 impacts (effects) are defined in in 40 CFR Section 1508.7 by the CEQ. Individual effects that may  
 13 contribute to a cumulative impact may be from a single project or a number of separate projects.  
 14 Individually, the impacts of a project may be relatively minor, but when considered along with  
 15 impacts of other closely related or nearby projects, including newly proposed projects, the effects  
 16 could be cumulatively considerable. This EIS/EIR has considered the potential cumulative effects  
 17 of the proposed project along with other current and reasonably foreseeable projects. Impacts for  
 18 the following have been found to be cumulatively considerable:

- 19 • Aesthetics
- 20 • Air Quality

## 21 ES.7 Summary of Environmental Impacts and 22 Mitigation

23 **Table ES-3** summarizes the comparison of alternatives identified and analyzed in Chapter 4 of this  
 24 EIS/EIR. Refer to the appropriate section for additional detail.

25 **Table ES-4** summarizes the comparison of impacts and CEQA significance determinations for all  
 26 alternatives.

27 **Table ES-5** summarizes the environmental impacts of the project, mitigation measures, and  
 28 unavoidable significant impacts identified and analyzed in Chapter 3 of this EIS/EIR. Refer to the  
 29 appropriate section for additional detail.

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**TABLE ES-3  
SUMMARY OF IMPACTS BY ALTERNATIVE**

<b>Resource</b>	<b>Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)</b>	<b>Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)</b>	<b>Alternative C: No Action / No Project</b>	<b>Alternative D: Rooftop Solar (CEQA Alternative only)</b>
<b>Aesthetics</b>	Indirect impacts as a result of dust clouds generated from construction grading activities.  Direct impacts to visual resources.  Direct impacts to visual resources during decommissioning.	Similar, but reduced impacts to visual resources as Alternative B would only require one-third of the area.	No impacts to visual resources in the Proposed Action area.	Reduced aesthetic impacts as installation of panels on large rooftops would be visually unobtrusive or unnoticed at ground level.
<b>Air Quality</b>	<p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (first calendar year)</p> <p>ROG = 1.39 / 50 NOx = 11.89 / 50 CO = 15.51 / 100 SOx = 0.04 / 100 PM10 = 9.98 / 70 PM2.5 = 1.54 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (second calendar year)</p> <p>ROG = 2.57 / 50 NOx = 23.31 / 50 CO = 29.82 / 100 SOx = 0.08 / 100 PM10 = 17.57 / 70 PM2.5 = 2.83 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (third calendar year)</p> <p>ROG = 1.21 / 50 NOx = 11.43 / 50 CO = 14.93 / 100 SOx = 0.04 / 100 PM10 = 9.88 / 70 PM2.5 = 1.53 / 100</p>	<p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (first calendar year)</p> <p>ROG = 0.58 / 50 NOx = 5.05 / 50 CO = 6.62 / 100 SOx = 0.02 / 100 PM10 = 3.77 / 70 PM2.5 = 0.61 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (second calendar year)</p> <p>ROG = 0.53 / 50 NOx = 5.01 / 50 CO = 6.55 / 100 SOx = 0.01 / 100 PM10 = 3.78 / 70 PM2.5 = 1.45 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Operational: Emissions / <i>De Minimis</i> Level Units tons/year</p> <p>ROG = 0.16 / 50 NOx = 0.12 / 50 CO = 0.10 / 100 SOx = 0.00 / 100 PM10 = 0.02 / 70 PM2.5 = 0.01 / 100</p>	<p>No impacts to air quality.</p> <p>If Alternative A is not built, then approximately 656,752 million tons of carbon dioxide equivalent (MT CO<sub>2</sub>e) per year of emissions from electricity generated by fossil fuel sources would not be reduced by renewable electricity from solar energy production.</p>	<p>Reduced impacts to air quality as no construction activities or ground disturbance would occur.</p> <p>Construction emissions related to delivery of materials and workers would be similar to or greater than Alternative A.</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
	<p><b>Does not exceed De Minimis Level</b></p> <p>Operational Emissions / <i>De Minimis</i> Level Units tons/year</p> <p>ROG = 0.23 / 50 NOx = 0.31 / 50 CO = 0.24 / 100 SOx = 0.00 / 100 PM10 = 0.06 / 70 PM2.5 = 0.02 / 100</p> <p><b>Does not exceed De Minimis Level</b></p> <p>Decommissioning</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions, and not expected to violate national or state ambient air quality standards.</p>	<p><b>Does not exceed De Minimis Level</b></p> <p>Decommissioning:</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions.</p>		
<b>Airspace Management and Use</b>	<p>Less than significant impacts with regard to consistency with the Airport Land Use Compatibility Plan (ALUCP), air traffic levels or patterns, safety or operational hazards to aircraft, and glint and glare assessments.</p>	<p>Similar, but reduced impacts due to a smaller area of disturbance.</p>	<p>No impact related to consistency with the ALUCP and air safety hazards, air traffic levels or patterns, safety or operational hazards to aircraft, and glint and glare assessments</p>	<p>Reduced impacts as a construction of a gen-tie lie is not required.</p> <p>Reduced impacts with regard to glint and glare.</p>
<b>Biological Resources</b>	<p>Direct impact to removing a maximum of 4,150 acres of general non-sensitive vegetation and wildlife resources.</p> <p>Direct and indirect impacts to special-status plant species.</p> <p>Direct impacts to special-status (federal and state) wildlife species.</p> <p>Direct impacts to sensitive habitats, including Joshua tree woodlands and wildlife movement corridors.</p>	<p>Similar but reduced potential impacts to special-status plants and wildlife with regard to a smaller amount of construction-related ground disturbance.</p>	<p>No impacts to onsite conditions or existing biological resources, including general vegetation and wildlife resources, special-status plants, special-status wildlife, and sensitive habitats.</p>	<p>Reduced impacts to biological resources as installation of solar panels would occur on currently developed areas.</p>
<b>Cultural and Paleontological Resources</b>	<p>Direct impacts to known and unknown cultural resources, archaeological resources, paleontological resources, and historical resources.</p> <p>Indirect impacts during routine operation and maintenance activities on cultural resources.</p>	<p>Similar but reduced impacts to cultural resources, archaeological resources, paleontological resources, and historical resources due to reduced physical development of the site.</p>	<p>No impacts to cultural or paleontological resources at the project site.</p>	<p>Reduced impacts to cultural resources as only previously developed areas would be modified.</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
<b>Geology and Soil Resources</b>	<p>Within the project site, there is an absence of any known active faults that cross or come anywhere near the project site; ergo, there would be no adverse effects related to fault rupture.</p> <p>The site is not located in an area undergoing fluid withdrawal that could generate a potential subsidence effect.</p> <p>Construction of the proposed project would involve earthwork activities that could expose soils to erosion.</p>	<p>Similar but reduced potential for adverse soil conditions; similar potential for ground subsidence or seismic-related ground failures.</p> <p>Reduced potential for erosion due to smaller site.</p>	<p>No impacts to geology, minerals, or soils.</p>	<p>Reduced impacts to geology and soils as it would not require in-ground construction and minimally expose people to geologic or seismic hazards.</p>
<b>Greenhouse Emissions</b>	<p><b>Gas</b></p> <p>Construction Emissions / CEQ Level Units tons/year (first calendar year) CO<sub>2</sub>e = 3,790.26 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (second calendar year) CO<sub>2</sub>e = 7,608.45 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (third calendar year) CO<sub>2</sub>e = 3,945.72 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Operational Emissions / CEQ Level Units tons/year CO<sub>2</sub>e = 3,948.65 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Decommissioning</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions, and not expected to violate national or state ambient air quality standards.</p>	<p>Construction Emissions / CEQ Level Units tons/year (first calendar year) CO<sub>2</sub>e = 3,782.10 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (second calendar year) CO<sub>2</sub>e = 1,902.28 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Operational: Emissions / CEQ Level Units tons/year CO<sub>2</sub>e = 1,473.01 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Decommissioning:</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions.</p>	<p>No generation of GHG emissions that would cause any impact to global climate change.</p> <p>Since Alternative A would not be built, approximately 656,752 MT CO<sub>2</sub>e per year of emissions from electricity generated by fossil-fuel sources would not be reduced by renewable electricity from solar energy production.</p>	<p>Impacts would be similar to, or greater than, Alternative A, because the GHG emissions from delivery of materials and workers would travel to greater distances at which construction sites would be located.</p>
<b>Hazards and Hazardous Materials</b>	<p>Potential impacts from the accidental release of hazardous materials during construction, maintenance and decommissioning.</p>	<p>Similar but reduced likelihood of accidental release of hazardous materials used onsite or potential due to smaller site and shorter construction time.</p>	<p>No impacts related to the accidental release of hazardous materials.</p>	<p>Reduced impacts as no construction activities would occur that could potentially disturb hazardous materials.</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
<b>Infrastructure</b>	<p>Construction period would require up to 200 acre-feet per year (AFY) of water to support concrete manufacturing, dust control, and sanitation.</p> <p>No impacts to electrical, natural gas, or other utility lines.</p> <p>Operation activities would require up to 30 AFY.</p> <p>A septic system would be needed to dispose of wastewater.</p> <p>Solid waste generated would not exceed the capacity of the Rosamond Landfill.</p>	<p>Similar but reduced usage of water and wastewater during construction due to the reduced size of the facility.</p>	<p>No impact to water supplies or generation of wastewater or solid waste.</p>	<p>Reduced impact as solar equipment installed on existing structures would not require new, in-ground construction.</p>
<b>Land Use</b>	<p>No conflict with floor-area ratio (FAR) regulations, Edwards AFB Installation Development Plan, Kern County General Plan, and West Edwards Road Settlement Specific Plan.</p>	<p>Similar impacts to Alternative A.</p>	<p>No impact to applicable land use plans, policies, and regulations.</p>	<p>Similar impacts to Alternative A.</p>
<b>Noise</b>	<p>Construction and decommissioning: maximum noise level generated would be 93 dBA at 50 feet from noise source, or 87 dBA from nearest sensitive receptor.</p> <p>Operation and maintenance would not result in any activities that would generate substantial temporary or periodic increases in ambient noise levels.</p>	<p>Reduced noise impacts due to the reduced size of the facility and siting further from the nearest sensitive receptor, and shorter construction timeframe.</p>	<p>No impact to noise levels associated with construction, operation and maintenance, and decommissioning.</p>	<p>Greater impacts as construction noise could occur adjacent to residences, which would result in impacts to a larger number of sensitive receptors.</p>
<b>Public Services</b>	<p>Increase in truck and employee traffic on haul routes during construction and operation could increase impacts on fire protection and police protection services.</p>	<p>Similar but reduced as this Alternative would require fewer construction workers and operations staff.</p>	<p>No impact to fire and police protection services.</p>	<p>Reduced impacts as this Alternative would not increase demand of public services.</p>
<b>Socioeconomics</b>	<p>Construction workforce consists of 100 to 450 daily workers, which would generate an estimated 779 jobs over the 2-year construction period.</p> <p>Operation and maintenance would require approximately 10 full-time personnel.</p>	<p>Similar but reduced impacts as this Alternative would require fewer workers and a reduction in the duration of construction. It would also require fewer full-time employees during operation and maintenance due to the smaller size of the facility.</p>	<p>No impact to employment and economic benefits.</p>	
<b>Environmental Justice</b>	<p>There are no communities of concern in the study area; therefore, the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and regional</p>	<p>There are no communities of concern in the study area; therefore, there the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and</p>	<p>No impact on local and regional communities of concern, including minority or low-income populations.</p>	<p>There are no communities of concern in the study area; therefore, the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
	communities of concern, including minority or low-income populations.	regional communities of concern, including minority or low-income populations.		regional communities of concern, including minority or low-income populations.
<b>Transportation</b>	Construction and decommissioning: increased traffic (1,840 daily trips) with no substantial change in LOS on affected roadways.  Operation and maintenance: minor traffic increase.	Construction and decommissioning: reduced duration of traffic increases.  Operation and maintenance: slightly reduced traffic increase.	No impacts to existing traffic conditions on area roadways.	Reduced impact as construction installation trips would be dispersed and would not congregate in one location.
<b>Hydrology and Water Quality</b>	Construction and decommissioning: potential impacts to water quality through erosion and sedimentation.  A maximum of approximately 200 AFY of water per year would be required during the 2-year construction period.  Approximately 200 total AFY would be required during decommissioning for dust control and sanitation.  During operation, the proposed project would require approximately 30 AFY.	Similar construction, impacts to hydrology and water quality.  Reduced impacts related to erosion and flooding due to fewer disturbed ground acres and shorter construction period.  Similar operational and decommissioning impacts, reduced amounts of pervious ground surface lost.	No impacts related to hydrology and water quality.	Reduced impacts, as there would be no increase in impervious surfaces.

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**TABLE ES-4**  
**CEQA COMPARISON OF ALTERNATIVES**

<b>Environmental Resource</b>	<b>Alternative A:</b> Proposed Project (Up to 4,000-acre Solar PV Project)	<b>Alternative B:</b> Reduced Scale Project (1,500-acre Solar PV Project)	<b>Alternative C:</b> No Action / No Project	<b>Alternative D:</b> Rooftop Solar
Aesthetics	Significant and Unavoidable	Significant and Unavoidable Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Agricultural Resources	Less than Significant	Less than Significant Same as A	No Impact Reduced Compared to A	No Impact Reduced Compared to A
Air Quality	Significant and Unavoidable	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Airspace Management and Use	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Biological Resources	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Cultural & Paleontological Resources	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Geology, Minerals, and Soils	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Greenhouse Gas Emissions	Less than Significant	Less than Significant Reduced Compared to A	Less than Significant Increased Compared to A	Less than Significant Reduced Compared to A
Hazards and Hazardous Materials	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Infrastructure	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Land Use	Less than Significant	Less than Significant Same as A	No Impact Reduced Compared to A	Less than Significant Similar to A
Noise	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Increased Compared to A
Public Services	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Transportation	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Hydrology and Water Quality	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A

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**TABLE ES-5  
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED ACTION SOLAR FACILITY (AIR FORCE MITIGATION AUTHORITY)**

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.1 Aesthetics</b>			
<p><b>Impact 3.1-1:</b> Substantially degrade the existing visual character or quality of the site and its surroundings.</p>	<p>Potentially significant</p>	<p><b>MM 3.1-3a: Recycling and Trash Abatement.</b> Prior to issuance of a grading or building permit, a Maintenance, Recycling and Trash Abatement, and Pest Management Program shall be submitted to the Air Force and Kern County.</p> <p>The program shall include, but not limited to the following:</p> <ol style="list-style-type: none"> <li>1. The project proponent shall clear debris from the project area at least twice per year; this can be done in conjunction with regular panel washing and site maintenance activities.</li> <li>2. Signs shall be clearly established with contact information for the project proponent's maintenance staff at regular intervals along the site boundary. Maintenance staff shall respond within 3 days to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Air Force, as necessary.</li> <li>3. Daily construction trash removal with recycling program. Pest/rodent barriers for all receptacles shall be detailed. Locations of all recycling and trash receptacles during operation of the project shall be shown on final plans.</li> <li>4. Weekly/Monthly/Annual ongoing trash removal and recycling program. Pest/rodent barriers for all receptacles shall be detailed.</li> <li>5. During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.</li> <li>6. An onsite Recycling Coordinator shall be designated by the project proponent to facilitate recycling as part of the Maintenance, Recycling and, Trash Abatement and Pest Management Program.</li> <li>7. 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.</li> <li>8. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal.</li> <li>9. Contact information of the coordinator shall be provided to the Air Force and Kern County prior to issuance of building permits.</li> </ol> <p><b>MM 3.1-1a: Facility Lighting Standards.</b> The project shall continuously comply with the following: Project facility lighting shall be designed to provide the minimum illumination needed to achieve safety and security objectives. 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 extend below the shields.</p> <p><b>MM 3.1-2a: Nonreflective Materials.</b> Prior to the issuance of building permits, the project proponent shall demonstrate compliance with the following:</p> <ol style="list-style-type: none"> <li>1. Any onsite buildings shall be constructed using nonreflective materials, as approved by Air Force and Kern County.</li> <li>2. Submit plans showing onsite buildings are designed with a color treatment to be complementary to the surrounding desert landscape and use nonreflective materials, such as matte or nonglossy paint, as approved by Air Force and Kern County.</li> </ol>	<p>Significant and unavoidable</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>MM 3.5-4a Vegetation Salvage Plan.</b> This measure applies to general vegetation and to special-status plants. (See section 3.5.5 for details).			
<b>Impact 3.1-2:</b> Create a new source of substantial light or glare that would adversely affect day or nighttime views in this area.	Potentially significant	<b>Implement Mitigation Measures MM 3.1-1a through MM 3.1-3a</b>	Less than significant
Cumulative	Potentially significant	<b>Mitigation Measures MM 3.1-1a through MM 3.1-3a</b>	Significant and unavoidable
<b>3.2 Agricultural Resources</b>			
<b>Impact 3.2-1:</b> The project would conflict with existing zoning for agricultural use or a Williamson Act Contract.	Less significant	than None required	
<b>Impact 3.1-2:</b> Involves other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.	Less significant	than None required	
Cumulative	Less significant	than None required	Less than significant
<b>3.3 Air Quality</b>			
<b>Impact 3.3-1:</b> The project would conflict with or obstruct implementation of the applicable air quality plan.	Significant and unavoidable	<p><b>MM 3.3-1a: Fugitive Dust Control Measures.</b> The project proponent shall ensure construction of the project shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive and any other measures to reduce fugitive dust emissions may be required by appropriate agencies to respond to urgent issues on site:</p> <ol style="list-style-type: none"> <li>1. Land Preparation, Excavation and/or Demolition. The following dust control measures shall be implemented:               <ol style="list-style-type: none"> <li>a. All soil being actively 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 suppressant.</li> <li>b. After active construction activities, soil shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods.</li> <li>c. 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.</li> </ol> </li> </ol>	Significant and unavoidable

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>d. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 25 miles per hour (averaged over 1 hour), or when dust plumes of 20% 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.</li> <li>e. All trucks entering or leaving the site will cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of 6 inches.</li> <li>f. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.</li> <li>g. Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.</li> <li>h. 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.</li> <li>i. Prior to construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed where appropriate.</li> <li>j. 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.</li> <li>k. The project operator shall generally avoid grading except when elevation changes exceed design requirements.</li> <li>l. When grading is unavoidable, it is to be phased and done with the application of approved chemical dust palliatives that stabilize the earth.</li> <li>m. Where ground is cleared, plant roots must be left in place where possible to stabilize the soil.</li> </ul>	
		<ul style="list-style-type: none"> <li>2. Site Construction. After active clearing, grading, and earth moving is completed within any portion of the site, the following dust control practices shall be implemented:                             <ul style="list-style-type: none"> <li>a. Dust suppressant shall be used on the same day or day immediately following the cessation of activity for a particular area where further activity is not planned.</li> <li>b. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas where planned after installation of the solar panels.</li> <li>c. All unpaved road areas shall be treated with a dust suppressant or graveled to prevent excessive dust.</li> <li>d. The project operator shall use dust suppression measures during road surface preparation activities, including grading and compaction.</li> <li>e. Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV) equal to or greater than 100 centimeters per second (cm/S) or a surface that is greater than or equal to 10 percent of non-erodible elements such as rocks or stones.</li> <li>f. Wind barrier fencing or screening shall be installed, when appropriate.</li> </ul> </li> <li>3. Vehicular Activities. During all phases of construction, the following vehicular control measures shall be implemented:                             <ul style="list-style-type: none"> <li>a. On-site vehicle speed shall be limited to 15 miles per hour on unpaved areas within the project site. Vehicles may travel up to 25 miles per hour on stabilized unpaved roads (application of palliatives, gravel, etc. that reduces the erosion potential of the soil) as long as such speeds do not create visible dust emissions.</li> </ul> </li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>b. Visible speed limit signs shall be posted at main ingress point(s) on site and posted at least every 500 feet, readable in both directions of travel along unpaved roads.</li> <li>c. All areas with vehicle traffic such as 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.</li> <li>d. 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 6 inches of freeboard.</li> <li>e. Streets adjacent to the project site shall be kept clean, and project-related accumulated silt shall be removed on at a minimum of once daily, or as necessary to prevent substantial offsite fugitive dust releases. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited.</li> <li>f. Access to the site shall be by means of an apron into the project site from adjoining surfaced roadways. The apron shall be surfaced or treated with dust suppressants. If site soils cling to the wheels of the vehicles, then a grizzly, wheel-washer, or other such device shall be used on the road exiting the project site, immediately prior to the pavement, to remove most of the soil material from vehicle tires.</li> </ul>	
		<p><b>MM 3.3-2a: Grading Plan.</b> Prior to the issuance of grading or building permits, the project proponent shall provide a comprehensive Phased Grading Plan for review by the Air Force and Kern County Planning and Natural Resources Department to reduce fugitive dust emissions resulting from wind erosion at the site. The Phased Grading Plan shall:</p> <ol style="list-style-type: none"> <li>1. Identify a comprehensive grading schedule for the entire project site which demonstrates the following: <ul style="list-style-type: none"> <li>a. <b>Minimal Grading.</b> Grading shall be minimized to limit the removal of topsoil and creation of loose soils. Only in areas where drainage improvements, structural foundations (e.g., inverter/transformer pads), service roads, and leveling of severe grades need to occur will grading that removes and recompacts the soil surface occur. Dust palliatives and water shall be immediately applied following any grading.</li> <li>b. <b>Dust Palliatives.</b> Application of dust palliatives or water shall be applied throughout project construction when required to help reduce dust, especially during periods of high winds, and shall include use of (1) an eco-safe, biodegradable, liquid copolymer shall be used to stabilize and solidify any soil; and (2) A hydro mulch mixture composed of wood fiber mulch and an Environ-Mend binder may also be applied, where real-time weather conditions dictate that additional measures are necessary.</li> <li>c. <b>Water Suppression.</b> Water trucks shall transit across the project site and construction access roads to suppress the fugitive dust from disturbed soils on roads and active working areas on a regular and as needed basis.</li> </ul> </li> <li>2. Minimize all grading activities to those areas necessary for project access and installation of solar panels and other associated infrastructure associated with the solar facility. Construction shall commence on areas that have undergone initial grading within 20 calendar days.</li> <li>3. Identify, in addition to those measures required by the Eastern Kern Air Pollution Control District, all measures being undertaken during construction activities and operational activities to ensure dust being blown off site is minimized. Measure may include, but are not limited to: <ul style="list-style-type: none"> <li>a. Increased use of water and or use of dust suppressant.</li> </ul> </li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>b. Pre-seeding and/or use of wood chips as permitted by the EKAPCD</li> <li>c. Construction of dust screening around the project site.</li> <li>d. Limit work hours to days where the wind speed is below 25 miles per hour. Implement High Wind Event Dust Plan approved by EKAPCD if performing in high winds including additional minimization measures.</li> <li>e. Obtain and Implement all requirements of the EKAPCD Dust Plan and/or Permit which may include monitoring of offsite emissions.</li> </ul>	
		<p>4. After construction is complete, the owner or operator of the site shall ensure the following activities are maintained to reduce dust generation during normal operations.</p> <ul style="list-style-type: none"> <li>a. Sites undergoing weed abatement activity shall not disrupt the soil to the extent that visible dust is carried by wind except where weed abatement is directed by a fire prevention/control agency.</li> <li>b. Travel on unpaved roads will be limited to fewer than 25 vehicle trips per day and at speeds between 5 and 35 miles per hour unless dust palliatives or frequent water is applied to the road surface.</li> </ul>	
		<p>5. Measures needed to control emissions from vehicle and equipment exhaust are to comply with the following:</p> <ul style="list-style-type: none"> <li>a. All stationary and portable engines must be certified to the appropriate USEPA Tier rating and CARB Executive Order emission standards. All new stationary and portable engines (including off-road equipment) must meet Tier IV emissions rating.</li> <li>b. CARB Fleet requirements for in-use off road equipment rated 25 hp or greater (construction equipment) and on-road diesel fueled vehicles with a gross vehicle weight greater than 10,000 pounds (semis, trucks, buses) shall limit idling to no more than 5 minutes when not actively in use. A vehicle may be allowed to idle for longer periods provided idling is necessary for safe operation of the vehicle or safety of the vehicle operator (emergency vehicles, air conditioning during excessive heat warnings, heating when temperature is below freezing).</li> <li>c. The equipment must be registered under Portable Equipment Registration Program (PERP) or Diesel Off-road Online Reporting System (DOORS) or maintain a local permit. The proponent/contractor shall be responsible for maintaining PERP/DOORS registration and notifying the Air Pollution Control District of any portable engines or generators on site.</li> <li>d. All equipment and vehicles shall only use gasoline, diesel, or alternative fuels that meet California Air Resources Board (CARB) certification specifications for ultra-low sulfur content and aromatic hydrocarbon content requirements.</li> </ul>	
		<p><b>MM 3.3-3a: Construction Equipment Standards.</b> The project proponent and/or its contractors shall implement the following measures during construction of the project to reduce equipment exhaust:</p> <ul style="list-style-type: none"> <li>1. All equipment shall be maintained in accordance with the manufacturer's specifications.</li> <li>2. 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.</li> <li>3. Electric equipment shall be used whenever possible in lieu of diesel or gasoline-powered equipment.</li> <li>4. Use only gasoline, diesel, or alternative fuels that meet CARB certification specifications for ultra-low sulfur content and aromatic hydrocarbon content requirements.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>5. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOx emissions.</li> <li>6. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines, or maintain and use all control equipment as listed on the CARB Executive Order for the engine as issued pursuant to 13 CCR 2420.</li> <li>7. Prohibit the use of heavy-equipment during first- or second-stage smog alerts and suspend all construction activities during second-stage smog alerts.</li> <li>8. Utilize existing power sources (i.e., power poles) when available. This measure would minimize the use of higher polluting gas or diesel generators.</li> <li>9. Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the extent feasible.</li> <li>10. Require that trucks and vehicles in loading or unloading queues have their engines turned-off when not in use.</li> <li>11. Off-road equipment engines over 50 horsepower shall be Tier 2 certified or higher (unless Tier 2 equipment has been determined to not be available).</li> <li>12. No vehicle or engines may idle for more than 5 consecutive minutes except to ensure safe operation of the vehicle or safety of the vehicle operator.</li> <li>13. All construction-related equipment rated higher than 25hp, including heavy-duty equipment, motor vehicles, and portable equipment, shall have current registration (PERP or DOORS) with CARB or local air permits.</li> </ol> <p><b>MM 3.3-4a: Onsite Idling Standards.</b> These measures should be required to ensure the reduction of public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles:</p> <ol style="list-style-type: none"> <li>1. The driver shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location.</li> </ol> <p><b>MM 3.3-5a: Dust Control.</b> The project proponent shall continuously comply with the following measures to control fugitive dust emissions during project operations and construction activities:</p> <ol style="list-style-type: none"> <li>1. Increase handling moisture content of graded soils from the typical of 15 percent to 20 percent during construction activities.</li> <li>2. Reduce speed of road grading by motor graders and rollers from typical 7.1 miles per hour (mph) to 5 mph.</li> <li>3. Prior to construction, onsite roads that will have the greatest extent of onsite travel shall be graveled.</li> <li>4. Use a dust suppressant such as magnesium chloride, polymer, or similar, to the extent feasible, including on gravel roads.</li> </ol> <p><b>MM 3.3-6a: Onsite Emissions Control.</b> The project proponent shall continuously comply with the following measures during construction and operations to control emissions from onsite dedicated equipment (equipment that would remain onsite each day):</p> <ol style="list-style-type: none"> <li>1. All onsite off-road equipment and on-road vehicles for operation and maintenance shall meet the recent CARB engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied gas, or electric, as appropriate. Use only gasoline, diesel, or alternative fuels that</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>meet CARB certification specifications for ultra-low sulfur content and aromatic hydrocarbon content requirements.</p> <ol style="list-style-type: none"> <li>2. All equipment shall be turned off when not in use, where feasible. Engine idling of all equipment shall be minimized to less than 5 minutes excepting safety requirements.</li> <li>3. All equipment engines shall be maintained in good operating condition and in tune per manufacturer's specification.</li> </ol> <p><b>MM 3.3-7a: Coating Requirements.</b> The developer shall comply with:</p> <ol style="list-style-type: none"> <li>1. The provisions of Eastern Kern Air Pollution Control District Rule 410.1A – Architectural.</li> <li>2. Coatings, during the construction of all buildings and facilities. Application of architectural coatings shall be completed in a manner that poses the least emissions impacts whenever such application is deemed proficient.</li> <li>3. The developer shall comply with the provisions of Eastern Kern Air Pollution Control District Rule 410.5 during the construction and pavement of all roads and parking areas within the Project area. Specifically, the developer shall not allow the use of:               <ol style="list-style-type: none"> <li>a. Rapid-cure cutback asphalt</li> <li>b. Medium-cure cutback asphalt</li> <li>c. Slow-cure cutback asphalt; and</li> <li>d. Emulsified asphalt</li> </ol> </li> </ol> <p><b>MM 3.3-8a: Erosion Control Measures.</b> The project proponent shall implement the following wind erosion reduction measures to comply with EKAPCD Rules 401 and 402 during strong wind events.</p> <ol style="list-style-type: none"> <li>1. Sand fences shall be used to capture sand deposits caused by wind erosion in the southwest portion of the project site. Sand fences should be placed to protect structures, including residences, and other amenities from wind-blown sand. In particular, sand fencing should be placed along Trotter Avenue.</li> <li>2. Install permanent fencing with a minimum 50 percent porosity and at least 6 feet in height in those areas immediately west and west-southwest of permanent existing residences prior to vegetation removal/soil disturbance within 1,000 feet of the residence.</li> <li>3. In areas where grading will occur, temporary construction fences (with minimum 50 percent porosity and at least 4 feet high) shall be installed every 200-300 feet perpendicular to the prevailing wind in a manner to reduce fugitive dust from leaving the area being graded. Depending on the use and effectiveness of water and dust suppressants, install additional temporary fencing with tighter spacing as necessary.</li> </ol> <p><b>MM 3.3-9a: Operational/Permanent Wind Erosion Reduction.</b> The project proponent shall continuously comply with the following measures during operation to control wind erosion:</p> <ol style="list-style-type: none"> <li>1. Install permanent fencing with a minimum 50% porosity and at least 6 feet in height along the project boundary along Lone Butte and Trotter. If significant sand movement is observed on site, additional sand fences should be placed within the site to reduce movement and protect onsite structures, including photovoltaic arrays, from wind-blown sand. As sand deposits grow, the sand deposits shall be planted with vegetation to reduce further erosion.</li> <li>2. Prepare and submit a Fugitive Dust Emission Control Plan pursuant to EKAPCD Rule 402 Section V.D.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>3. Apply for and obtain EKAPCD Authority to Construct / Permit to Operate prior to conducting any work on the project site.</li> <li>4. Prepare a Fugitive Dust Emission Monitoring Plan, which shall include installation of onsite PM10 air monitors for a minimum of 5 years, as required by EKAPCD, to ensure effectiveness of dust mitigation measures or propose alternative PM monitoring plan using USEPA Method 9 Visible Emissions Evaluation or other approved opacity monitoring methods. Per EKAPCD guidelines, the operator of a facility may petition to cancel District PTO, in the event that 5 years of data demonstrate " (upwind/downwind concentration difference is 50-µg/m3 or less [based on 1-hour averages]).</li> </ol>	
<p><b>Impact 3.3-2:</b> The proposed projects could violate an applicable air quality standard or contribute substantially to an existing or projected air quality violation.</p>	<p>Significant and unavoidable</p>	<p>Mitigation Measures MM 3.3-1a through MM 3.3-9a</p>	<p>Significant and unavoidable</p>
<p><b>Impact 3.3-3:</b> Construction and operation of the proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable federal or state ambient air quality standards (including releasing emissions that exceed quantitative thresholds for ozone precursors).</p>	<p>Significant and unavoidable</p>	<p>Mitigation Measures MM 3.3-1a through MM 3.3-9a</p>	<p>Significant and unavoidable</p>
<p><b>Impact 3.3-4:</b> Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.</p>	<p>Potentially significant</p>	<p><b>MM 3.3-10a: Valley Fever.</b> 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"> <li>1. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.</li> <li>2. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; symptoms of exposure; and instruction for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent systems lasting more than 3 days shall be recommended to seek immediate medical advice.</li> <li>3. Training on methods that may help prevent Valley Fever infection.</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			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 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 county. This proof can be via printed training materials/agenda, DVD, digital media files, <b>or photographs</b> .	
<b>Cumulative</b>	Significant and unavoidable	and	Mitigation Measures MM 3.3-1a through MM 3.3-9a	Significant and unavoidable
<b>3.4 Air Space Management and Use</b>				
<b>Impact 3.4-1:</b> The project is located within the adopted Kern County Airport Land Use Compatibility Plan and could result in a safety hazard for people residing or working in the project area.	Less significant	than	<p><b>MM 3.4-1a: Frequency Management.</b> Prior to the operation of the solar facility, the developer shall consult with the Air Force to identify the appropriate Frequency Management Office personnel to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.</p> <p><b>MM 3.4-2a: Federal Aviation Administration.</b> Prior to issuance of building permits:</p> <ol style="list-style-type: none"> <li>1. The developer shall 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;</li> <li>2. The developer shall also provide documentation to Air Force demonstrating that the Federal Aviation Administration has issued a "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.</li> <li>3. The developer shall also provide documentation to Air Force demonstrating that a copy of the approved form(s) has been provided to the operators of Mojave Air Space and Port.</li> </ol>	Less than significant
<b>Impact 3.4-2:</b> The project is located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.	Less significant	than	No mitigation measures are required.	Less than significant
<b>Impact 3.4-3:</b> The project could result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	Less significant	than	No mitigation measures are required.	Less than significant
Cumulative	Less significant	than	Mitigation Measures MM 3.4-1a and MM 3.4-2a.	Less than significant
<b>3.5 Biological Resources</b>				
<b>Impact 3.5-1:</b> The project would have a substantial adverse	Potentially significant		<b>MM 3.5-1a: Biological Monitoring.</b> Prior to the issuance of grading or building permits, the project proponent shall retain a Lead Biologist who has experience with western Mojave Desert wildlife, is familiar with listed and	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<p>impact, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.</p>		<p>other special status species from the project vicinity, has experience with construction compliance monitoring, and is familiar with the ecosystems on and near the project site to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist shall be assisted by qualified biological monitors. Resumes for the Lead Biologist and qualified biological monitors shall be submitted and approved by the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resource Manager. The Lead Biologist and/or qualified biological monitors shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase. The Lead Biologist and qualified biological monitors shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist and qualified biological monitors shall have in her/his possession a copy of all the compliance measures while work is being conducted on the project site.</p> <p><b>MM 3.5-2a: Noise Mitigation.</b> The following measure will be implemented to avoid, minimize and mitigate potential impacts to special-status wildlife from noise:</p> <ol style="list-style-type: none"> <li>1. Construction equipment will be restricted from use in areas where biological buffers have been established to protect nests or other potentially noise sensitive resources. Buffers will be removed when nests have fledged or failed, or resource concerns no longer exist.</li> </ol> <p><b>MM 3.5-3a Worker Environmental Awareness Training and Education Program.</b> Prior to the issuance of grading or building permits and for the duration of construction activities, within 1 week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend a Worker Environmental Awareness Training and Education Program (WEATEP), developed and presented by the Lead Biologist. If approved by the Edwards AFB Natural Resource Manager and if in conjunction with discussion by the Lead Biologist a training video may be used in certain cases. The Training and Education shall include:</p> <ol style="list-style-type: none"> <li>1. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program.</li> <li>2. The program shall include information on the life history of the desert tortoise and migratory birds. The program shall also discuss the legal protection status of the species, the definition of “take” under the Federal Endangered Species Act. measures the project proponent is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the Federal Endangered Species Act.</li> <li>3. An acknowledgement form signed by each worker indicating that Worker Environmental Awareness Training and Education Program has been completed shall be provided to the Edwards AFB Natural Resource Manager.</li> <li>4. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program.</li> <li>5. A copy of the audio or video training, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resource Manager.</li> <li>6. The construction crews and contractor(s) shall be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM 3.5-4a Vegetation Salvage Plan.</b> This measure applies to general vegetation and to special-status plants.</p> <ol style="list-style-type: none"> <li>Restoration activities will be conducted in accordance with the revegetation plans prepared by Edwards Air Force Base (Air Force 1994; Air Force 2012) and any new scientifically proven methodology. Monitoring success of restoration efforts will be implemented for a longer period than the standard 5-year monitoring period due to slow recovery rates of revegetated areas in the desert. The revegetation/restoration plan shall be submitted to the Edwards AFB Natural Resources Manager for comment and approval.</li> <li>Priority for revegetation will be given to desert tortoise critical habitat.</li> <li>Project activities that would result in the removal of any vegetation in an area that was previously undisturbed (including areas that were once disturbed and now contain vegetation) may require revegetation/restoration in accordance with the Edwards Air Force Base Revegetation Plan (AFFTC/EM 1994).</li> <li>Lands above underground utilities will be revegetated unless a road needs to be constructed and maintained for access and maintenance activities.</li> <li>This project may impact sensitive plant species including alkali mariposa-lily, desert cymopterus, recurved larkspur, Barstow woolly sunflower, and sagebrush loeflingia. The proponent/contractor shall develop protocols for the surveying, translocating where appropriate, and monitoring of sensitive species in the project area. The survey, translocating, and monitoring protocols shall be documented and submitted to the Edwards AFB Natural Resources Manager for comments and approval prior to initiation of work activities. Survey and monitoring data shall be recorded and submitted to the Edwards AFB Natural Resources Manager.</li> </ol> <p><b>MM 3.5-5a Weed Management.</b> Weed Management will be consistent with the EAFB Integrated Pest Management Plan and will be implemented to reduce the potential for the introduction or increase of invasive plant species during construction, operation and maintenance, and decommissioning of the proposed project. Weed Management will conform to the Integrated Natural Resources Management Plan for areas within the base boundaries and will include measures related to:</p> <ol style="list-style-type: none"> <li>Equipment cleaning</li> <li>Site soil management</li> <li>Use of weed free products for erosion control</li> <li>Control methods, including both industrial controls and herbicides, identifying specific herbicides and including the Pesticide Use Proposal or a schedule for completing it</li> <li>Schedule of surveys and reporting for invasive weed identification and control, including success criteria and measures to be implemented if criteria are not met.</li> </ol> <p><b>This plan will be approved by the Air Force, and Kern County prior to the start of construction.</b></p> <p><b>MM 3.5-6a: Raven Management.</b> Prior to grading and construction and after operational, the following measures will be implemented to reduce Raven predation:</p> <ol style="list-style-type: none"> <li>All trash and food items will be disposed of in common raven-proof containers, and regularly removed from the project site to reduce attraction of common ravens.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>2. Water tanks and trucks will be maintained in good working order and free of leaks so common ravens will not be attracted to standing water.</p> <p><b>MM 3.5-7a: Bird Conservation Strategy.</b> To mitigate for potential impacts to special-status birds and birds protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code during construction activity, the following measures shall be implemented as part of the approval for a grading or building permit:</p> <ol style="list-style-type: none"> <li>1. The Migratory Bird Treaty Act (MBTA) protects most birds and their active nests (nests with egg or young). Disturbance of an active bird nest with eggs/fledglings or a burrowing owl burrow is not permitted.</li> <li>2. The proponent/contractor shall develop protocols for surveying and monitoring of migratory birds during both nesting and non-nesting seasons for all related work activities that may potentially harm/harass migratory birds or their active nests. The survey and monitoring protocols shall be documented and submitted to the Kern County Planning and Natural Resources Department and to the Edwards AFB Natural Resources Manager for comments and approval prior to initiation of work activities.</li> <li>3. During the avian breeding season (1 February – 31 August), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 3 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 3 days prior to clearing of specific areas of the site. No pre-construction surveys are required outside of the avian breeding season.</li> <li>4. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the biologist be allowed to handle the nest or its eggs. The survey shall cover all reasonably potential nesting locations on and within 500 feet of the project site, if feasible—this includes ground nesting species, such as California horned lark and killdeer, all shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. Access shall be granted on private onsite properties prior to conducting surveys on private land. If access is not obtainable, biologists shall survey these areas from the nearest vantage point with use of spotting scopes or binoculars.</li> <li>5. If construction is scheduled to occur during the non-nesting season (September 1 to January 31), no preconstruction surveys or additional measures are required.</li> <li>6. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required so long as all suitable nesting sites have been cleared from the site during the non-nesting season and no new sites have been created.</li> <li>7. If active nests are found, the proponent/contractor qualified wildlife biologist will determine an appropriate no-disturbance buffer requirement. 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. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material.</li> <li>8. The applicant shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in <i>Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006</i> (APLIC, 2006), and for collision-reducing techniques as outlined in <i>Reducing Avian Collisions with Power Lines: The State of the Art in 2012</i> (APLIC, 2012), or any superseding document issued by APLIC. The applicant shall monitor for new versions of the APLIC collision and electrocution guidelines and update designs or implement new</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>measures as needed during project construction, provided these actions do not require the repurchase of previously ordered power line structures. Bird diverters and anti-electrocution features shall be maintained for the life of the project. Details of design components of bird diverters and anti-electrocution features shall be indicated on all construction plans.</p> <ol style="list-style-type: none"> <li>9. No rodenticides shall be used on the property. All uses of herbicidal compounds shall be approved by the Edwards AFB Natural Resources Manager, comply with Edwards AFB reporting requirements, observe label and other restrictions mandated by the United States Environmental Protection Agency, California Department of Food and Agriculture, and state and federal legislation, and be applied by qualified personnel.</li> <li>10. All meteorological and communication towers shall be of monopole design to avoid the use of guy wires to reduce bird collision, injury, or death.</li> <li>11. All solar mount poles, fencing poles, or other hollow vertical structures shall be capped immediately after installation to prevent bird entrapment and death</li> <li>12. The proponent will develop a Bird Conservation Strategy (BCS) using data collected as part of the biological surveys of the site and any data from nearby solar and wind projects that may be relevant. The BCS shall specify one year of post-construction mortality monitoring.</li> <li>13. The proponent shall develop and implement a wildlife incident reporting program.</li> </ol> <p><b>MM 3.5-8a: Desert Tortoise Oversight.</b> The following measures are in accordance with the terms and conditions of the U.S. Fish and Wildlife Service Biological Opinion for: Operations and Activities at Edwards Air Force Base, California (8-8-14-F-14) regarding the effects on the federally threatened desert tortoise and its critical habitat.</p> <ol style="list-style-type: none"> <li>1. This project will require oversight by a proponent-provided authorized biologist who is approved by the U.S. Fish and Wildlife Service (USFWS) to implement the USFWS Biological Opinion for: Operations and Activities Edwards Air Force Base, California (8-8-14-F-14). The authorized biologist will oversee construction activities as well as all activities conducted prior to installation of desert tortoise exclusion fencing, and will remain available to respond to maintenance activities as necessary. The proponent shall submit a request for authorized biologist approval to the Kern County Planning and Edwards AFB Natural Resource Manager at least 3 months prior to commencement of project activities. All incidents of non-compliance in accordance with the biological opinion or permit must be recorded and reported to the Kern County Planning and Natural Resources Department and to the Edwards AFB Natural Resource Manager.</li> <li>2. If the authorized biologist is unable to perform all required monitoring/surveys, the proponent shall provide desert tortoise monitors. Desert tortoise monitors shall be approved by the authorized biologist to monitor project activities within desert tortoise habitat, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol. The monitors will report incidents of noncompliance in accordance with a biological opinion or permit, move desert tortoises from harm's way when desert tortoises enter project sites and place these animals in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their immediate possession until an authorized biologist assumes care of the animal. Monitors shall not conduct clearance surveys or other specialized duties of the authorized biologist unless directly supervised by an authorized biologist; "directly supervised" means the authorized biologist has direct voice and sight contact with the monitor. The desert tortoise monitor may directly supervise other personnel to assist with surveying for desert tortoises when deemed necessary.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>3. Authorized biologists are the only individuals approved to handle desert tortoises on base. However, nothing prohibits any individual from handling a desert tortoise when necessary to protect the safety or health of the animal when it is in immediate danger.</li> <li>4. All project personnel working in the area shall attend desert tortoise awareness training prior to commencing work or visiting the work site. Training will be provided by the proponent's authorized biologist and documented per the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resource Manager instructions.</li> <li>5. The <i>Desert Tortoise Handout</i> (DT Handout 412 TWPA Release #18150 20180316) shall be distributed to vehicle and equipment drivers accessing the project area and also be posted at the project site.</li> <li>6. A desert tortoise pre-activity survey by the contractor's authorized biologist is required prior to commencing work. Any sightings of desert tortoises, signs of desert tortoises, or desert tortoise burrows found within the project area shall be reported immediately to the Edwards AFB Natural Resource Manager.</li> <li>7. In the event that project development or activities would result in the clearing of a large area of suitable desert tortoise habitat, desert tortoises will be relocated from these sites to other habitat. All translocated desert tortoises will be monitored to determine the success of the relocation. Translocation and monitoring will be performed under the direct supervision of the contractor's authorized biologist in coordination with the Edwards AFB Natural Resources Manager.</li> <li>8. The project work areas will be fenced, flagged, or marked to define the limit of project activities.</li> <li>9. Vehicles will generally remain on previously established roads and within staging areas and follow flagged off-road routes that have been surveyed or cleared of desert tortoises. When driving off-road, operators will minimize disturbance to vegetation and not exceed 10 miles per hour. All personnel will inspect under vehicles for desert tortoises prior to operating them in desert tortoise habitat.</li> <li>10. Project activities between dusk and dawn will be confined to areas free of vegetation and cleared of desert tortoises by contractor personnel who are authorized as described above.</li> <li>11. Open excavations will be checked regularly by the contractor personnel who are authorized as described above will remove any trapped animals. Open excavations will be covered, backfilled, wildlife ramps placed, or fenced at the end of each workday. At the ends of a ditch or trench, a 3: 1 slope will be created to allow wildlife to exit should they become trapped in the ditch or trench.</li> <li>12. Any pipes stored within the area shall be capped on open ends or elevated at least 12 inches off the ground to prevent entry by desert tortoise or other wildlife. In the event capping is not feasible, materials will be inspected prior to movement to ensure no wildlife is trapped prior to moving materials. Installation of fencing along roadways will be implemented in areas deemed hazardous to desert tortoises to prevent injury or mortality.</li> <li>13. Records will be kept according to Edwards AFB Natural Resources Manager instructions and submitted monthly to the Kern County Planning and Natural Resources Department and to Edwards AFB Natural Resources Manager regarding incidents of non-compliance with the biological opinion, acres of desert tortoise habitat disturbance, acres of habitat restoration, wildlife sightings, wildlife injury, wildlife mortality, and desert tortoise handling. Submission of Geographic Information System (GIS) deliverables will be per the most current Edwards Air Force Base Standards for GIS Deliveries.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM 3.5-9a: Nesting Birds and Raptors.</b></p> <p>The following survey actions shall be complied with:</p> <ol style="list-style-type: none"> <li>1. If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are required.</li> <li>2. To avoid impacts to nesting birds in the project site, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance.               <ol style="list-style-type: none"> <li>a. The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 0.5-mile buffer around the project site.</li> <li>b. Surveys shall be conducted no more than 3 days prior to construction activities.</li> <li>c. Surveys shall not be conducted for the entire project site at one time; they must be phased so that surveys occur shortly before a portion of the project site is disturbed.</li> </ol> </li> <li>3. If active nests are found, the proponent/contractor qualified wildlife biologist will determine an appropriate no-disturbance buffer requirement and no construction within the buffer allowed until the Lead Biologist or onsite qualified biological monitor has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of the Lead Biologist or onsite qualified biological monitor.</li> </ol> <p><b>MM 3.5-10a: Preconstruction Clearance Surveys.</b> Preconstruction surveys for desert kit fox, American badger, and Mohave ground squirrel shall be conducted within the project boundaries by the Lead Biologist or qualified biological monitor within 14 days of the start of any vegetation clearing or grading activities. Methodology for preconstruction surveys shall be consistent with standard industry practice for conducting these surveys, and may be conducted simultaneously with preconstruction surveys for desert tortoise and burrowing owl. Surveys shall not be conducted for all areas of suitable habitat at one time; they must be phased so that surveys occur within 30 days of the portion of the project site being disturbed. If any evidence of occupation of the project site by desert kit fox or American badger is observed, a buffer shall be established by a qualified biological monitor that results in sufficient avoidance, as described below:</p> <ol style="list-style-type: none"> <li>1. Preconstruction surveys shall be conducted by the Lead Biologist or onsite qualified biological monitors for the presence of American badger or desert kit fox dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in areas of suitable habitat for American badger and desert kit fox, which includes desert scrub habitats. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities (except for use of existing roads by rubber-tired vehicles):               <ol style="list-style-type: none"> <li>a. Desert kit fox or American badger potential den: 30 feet.</li> <li>b. Desert kit fox or American badger active den: 100 feet.</li> <li>c. Desert kit fox occupied natal den (during natal season): 500 feet. Natal season for desert kit fox is January 1 through August 31. Active natal dens may become inactive prior to August 31. The Lead Biologist or qualified biological monitor can determine natal den status through remote camera monitoring, in consultation with CDFW.</li> </ol> </li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>d. If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger and desert kit fox:</p> <ul style="list-style-type: none"> <li>i. If the Lead Biologist or onsite qualified biological monitor determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or desert kit foxes from reusing them during construction.</li> <li>ii. If the Lead Biologist or onsite qualified biological monitor determines that potential dens may be active, an onsite passive relocation program shall be implemented for non-natal dens. This program shall consist of determining status of the den (active natal or active non-natal), excluding American badgers or desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 7 days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the Lead Biologist or onsite qualified biological monitor determines that American badgers or desert kit foxes have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent reuse during construction. Passive relocation of natal dens is limited to outside the natal season (January 1 through August 31) or after the Lead Biologist or onsite qualified biological monitor documents that the natal den has become inactive.</li> <li>iii. During fencing, vegetation clearing, and initial grading activities, daily monitoring reports shall be prepared by the onsite qualified biological monitors. The Lead Biologist shall prepare a summary monitoring report documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall activities conducted related to biological resources, including the Worker Environmental Awareness Training and Education Program, preconstruction surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. These monitoring reports shall be submitted to the Kern County Planning and Natural Resources Department and to the Edwards AFB Natural Resources Manager on a monthly basis along with copies of all survey reports.</li> </ul> <p>If Mohave ground squirrels are found during pre-construction surveys, measures for avoiding and minimizing impacts to Mohave ground squirrels shall include the following:</p> <ul style="list-style-type: none"> <li>• Methods demonstrated to be suitable for excluding Mohave ground squirrels from the work area, such as fencing.</li> <li>• Measures and procedures related to regular monitoring of construction for presence of Mohave ground squirrels.</li> <li>• A requirement to immediately cease work if a Mohave ground squirrel occurs in a work area.</li> <li>• Requirements for worker education material as it pertains to Mohave ground squirrels.</li> <li>• Reporting requirements to include providing any reports to the Edwards AFB Natural Resources Manager.</li> <li>• Approved Methods for translocating Mohave ground squirrels occupying areas where avoidance is not feasible.</li> <li>• Identification of suitable Locations for relocating Mohave ground squirrels.</li> </ul> <p><b>If relocation of Mohave ground squirrel is necessary, the applicant shall coordinate with CDFW and the Edwards AFB Natural Resources Manager.</b></p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM-3.5-11a: Burrowing Owl Surveys and Avoidance/Relocation.</b></p> <ol style="list-style-type: none"> <li>1. No more than 14 days prior to ground-disturbing activities (vegetation clearance, grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct a pre-construction take avoidance survey on and within 200 meters (656 feet) of the construction zone (where legally accessible) to identify occupied breeding or wintering burrowing owl burrows.</li> <li>2. The take avoidance burrowing owl survey shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFW, 2012) and shall consist of walking parallel transects 7 to 20 meters (23 to 66 feet) apart, adjusting for vegetation height and density as needed, and noting any burrows with fresh burrowing owl sign or presence of burrowing owls. Note that owl sign can wash away during rain events and may take several days to build back up again. As each burrow is investigated, biologists shall also look for signs of American badger and desert kit fox. Copies of the burrowing owl survey results shall be submitted to the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resources Manager prior to ground-disturbing activities. <ol style="list-style-type: none"> <li>a. If burrowing owls are detected on site, no ground-disturbing activities shall be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 to August 31), unless otherwise authorized by CDFW. During the nonbreeding season (September 1 to January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow or as allowed by CDFW. Depending on the level of disturbance and proposed measures, a smaller buffer may be established in consultation with Lead Biologist.</li> <li>b. If avoidance of active burrows is infeasible during the nonbreeding season, then a Burrowing Owl Relocation Plan will be developed in coordination with the Edwards AFB Natural Resources Manager. If the owls are not in danger of direct impact, then the default should always be to allow the owls to decide whether they would like to leave the existing burrow site. A component of this is to provide replacement burrows at a 2:1 ratio in nearby suitable habitat, or verify that suitable unoccupied burrows are available nearby. If the owls must be relocated, then before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and scoping, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation (CDFW, 2012). Passive relocation consists of excluding burrowing owls from occupied burrows and providing suitable artificial burrows nearby for the excluded burrowing owls. Three consecutive days of negative game camera results are needed to verify absence. This is further supported, by scoping with an endoscope immediately prior to burrow dismantling. It is important to completely collapse the burrow network when closing the burrow.</li> </ol> </li> </ol> <p><b>MM 3.5.12a: Trench Monitoring Requirements.</b> During construction and decommissioning of the project, all trenches or holes shall be provided with one or more escape ramps constructed of earthen fill or wooden planks (with a minimum 1-foot in width) for the protection of wildlife species and must be inspected by the Lead Biologist, qualified biological monitor, designated compliance manager, project operator, or contractor prior to being filled.</p> <ol style="list-style-type: none"> <li>1. Any such features that are left open overnight will be searched each day and prior to construction activities to ensure no animals are trapped. Work will not continue until trapped animals have moved out of open trenches. Open excavations of any kind created during project activities shall be secured at</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>the end of each day by backfilling, placing a cover over the excavation, installing a temporary 412 CEG/CEVA-approved desert tortoise fence, and/or ramping excavations at a 3:1 slope.</p> <ol style="list-style-type: none"> <li>2. All open holes, sumps, and trenches within the Project footprint shall be inspected at the beginning, middle, and end of each day for wildlife. If any animals are found in an excavation, immediately notify 412 CEG/CEVA</li> <li>3. All trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:3 slope shall be covered, when workers or equipment are not actively working in the excavation, which includes cessation of work overnight, or shall have an escape ramp of earth or a non-slip material (with a minimum 1-foot in width) with a less than 1:3 slope. Where an escape ramp is required, it shall be placed at least every 300 feet. To prevent inadvertent entrapment of wildlife, when covers are required according to the conditions outlined above, a qualified biological monitor or designated compliance manager shall oversee the covering of all excavated, trenches, holes, sumps, or other excavations with a greater than 1:4 slope of any depth with barrier material (such as hardware cloth) at the close of each working day such that wildlife are unable to dig or squeeze under the barrier and become entrapped, or excavations shall have an escape ramp of earth or a non-slip material (with a minimum 1-foot in width) with a less than 1:3 slope.</li> <li>4. The outer 2 feet of excavation cover, shall conform to solid ground so that gaps do not occur between the cover and the ground and secured with soil staples or similar means to prevent gaps. Each morning, mid-day, the end of each day (including weekends and any other non-work days), and immediately before trenches, holes, sumps, or other excavations are back-filled, a qualified biological monitor or designated compliance manager shall thoroughly inspect for wildlife. If wildlife is observed, all activities in the vicinity shall cease and the onsite qualified biological monitor or Lead Biologist shall be consulted.</li> <li>5. Trenches, holes, sumps, or other excavations that are covered long term shall be inspected at the beginning of each working day to ensure inadvertent entrapment has not occurred.</li> <li>6. If any worker discovers that wildlife has become trapped, all activities in the vicinity shall cease and Lead biologist or the onsite qualified biological monitor shall be notified immediately. Project workers guided by the Lead Biologist or qualified biological monitor shall allow the trapped wildlife to escape unimpeded before activities are allowed to continue. If the entrapped animal is a federal- or state-listed species and an ITP has been acquired by the project proponent for that species or the species is covered by an existing biological opinion (BO), only a Designated Biologist and/or Authorized Biologist as defined in the terms of the ITP(s) or BO may capture and relocated the animal in accordance with the project ITP or BO provisions. If the entrapped animal is a Federal- or State-listed species and an ITP or BO has not been acquired by the project proponent for that species, the project proponent should contact the appropriate wildlife agency immediately.</li> <li>7. A log shall be kept and provided to the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resources Manager monthly during construction and decommissioning indicating compliance.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.5-2:</b> The project would have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.	Potentially significant	Mitigation Measures MM 3.5-1a through MM 3.5-12a	Less than significant
<b>Impact 3.5-3:</b> The project would have a substantial adverse impact on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Potentially significant	Mitigation Measures MM 3.5-1a and MM 3.5-3a	Less than significant
<b>Impact 3.5-4:</b> The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Less than significant	Mitigation Measures MM 3.5-1a through MM 3.5-12a	Less than significant
<b>Impact 3.5-5:</b> The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially significant	<p><b>MM 3.5-13a: Joshua Tree Woodland Preservation.</b> If avoidance of Joshua tree woodland (defined as areas with 10 percent or more of coverage by Joshua tree) is not feasible, then a Joshua Tree Woodland Preservation Plan, approved by the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resources Manager, shall be required. The plan shall detail the number of acres Joshua trees woodland to be removed and outline a compensatory mitigation approach based on one or a combination of the following options: (1) payment of an in lieu fee to or purchase of mitigation credits from a third-party organization; or (2) the purchase of mitigation lands at a minimum 1:1 ratio for each acre of impacted Joshua tree woodlands.</p> <p>If purchase of mitigation land is pursued, the following shall be completed: (1) a deed restriction, conservation easement, or similar instrument shall be established on the mitigation land; (2) a management plan to maintain habitat conditions on the site must be prepared and implemented; and (3) a non-wasting endowment sufficient to implement the management plan must be provided. The mitigation lands shall provide habitat at a 1:1 ratio for impacted Joshua tree woodlands, comparable to the woodlands to be impacted by the project (e.g., similar abundance and size of Joshua trees, similar levels of disturbance or habitat degradation, etc.). The management plan shall specify maintenance and monitoring requirements for the preserved land. Suitable mitigation lands provided for other resources may be used for Joshua tree woodland mitigation.</p>	Less than significant
<b>Impact 3.5-6:</b> The project would conflict with the provisions of an	Less than significant	None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.			
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.5-1a through MM 3.5-13a	Less than significant

**3.6 Cultural and Paleontological Resources**

<p><b>Impact 3.6-1:</b> The project would cause a substantial adverse change in the significance of a historical or unique archaeological resource.</p>	Potentially significant	<p><b>MM 3.6-1a Consultation Agreement and Cultural Resources Management Plan.</b> The Cultural Resources Manager (CRM) for archaeology at Edwards Air Force Base in accordance with 36 CFR 800.16(y) has determined that the development of a commercial Solar Enhanced Use Lease (EUL) project is a federal undertaking with the potential to adversely affect cultural resources including archaeological sites. The EUL consists of two separate components, the power generation facility located on Edwards AFB and not to exceed 4,000 acres in size, and the gen-tie route options located off-base that will be used to transmit the generated power to a hub connected to the electrical grid up to 14 miles distant. As such, the entire project is subject to the Section 106 process with Edwards AFB acting as the lead agency for Section 106 consultation and Kern County as the lead agency for AB 52 consultation. Pursuant to 36 CFR 800.2 the Section 106 consultation will include the California State Historic Preservation Officer (SHPO), and federal and non-federally recognized tribes. The CRM will also seek additional consulting or interested parties consistent with 36 CFR 800.2(c)(5). Collectively the SHPO, Kern County, private land owners, the EUL developer, tribes, consulting and interested parties will be from here forward referred to as stakeholders. Because identification of historic properties/historical resources and adverse effects/significant impacts under Section 106 of the NHPA/CEQA, respectively, is complete, the CRM will enter into a Memorandum of Agreement (MOA) with the State Historic Preservation Officer and consulting parties according to 36 CFR 800.6(b) and (c).</p> <p>The MOA shall identify the actions required to minimize and resolve adverse effects, including the requirement for preparation of a Historic Properties Treatment Plan (HPTP). The HPTP will require and guide implementation of MM 3.6-2a through MM 3.6-7a for the Proposed Action and Alternatives, and MM 3.6-1b through MM 3.6-4b, and MM-3.6-8b for the gen-tie; these mitigation measures provide performance standards and feasible mitigation to ensure that impacts to cultural resources will be less than significant. The HPTP will outline the procedures for treatment of known historic properties/historical resources and inadvertent discoveries, as well as archaeological monitoring protocols, and outline the requirements for retention of a Secretary of Interior qualified archaeologist to implement mitigation, as appropriate. Development of the MOA and HPTP and in executing the Section 106 process in consultation with all stakeholders ensures that Edwards AFB will fulfill its Section 106 obligations and allow a Record of Decision to be issued, and will ensure that the County's CEQA obligations are satisfied for mitigating significant impacts to a level below significance.</p> <p>The reports documenting the implementation of the HPTP shall be submitted to the Kern County Planning and Development Director and Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield, and to the CRM.</p>	Less than significant
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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM 3.6-2a: Data Recovery and Avoidance.</b> Where preservation in place of a significant archaeological resource (including Unique Archaeological Resources as defined in CEQA) is not feasible, a qualified archaeologist, in consultation with the Cultural Resource Manager (CRM), County of Kern, consulting tribes, and the project applicant, shall complete archaeological data recovery. This excludes archaeological resources found to contain human remains and/or funerary objects or sacred objects, which will be treated according to the NAGPRA Plan of Action. The standard for completion of data recovery may vary for individual archaeological sites, but is understood herein to be collection of a statistically representative sample of the archaeological deposits such that data redundancy is achieved and the unique properties of the archaeological sites are addressed. Implementation of data recovery mitigation shall include the following steps:</p> <ol style="list-style-type: none"> <li>1. In accordance with the requirements of mitigation measure (MM) 3.6-2, prepare a research design and archaeological data recovery plan prior to project-related ground disturbance for the recovery of resources in unavoidable sites that will capture those categories of data for which the site is significant, and implement the data recovery plan.</li> <li>2. The data recovery phase shall focus on recovering archaeological data sufficient to mitigate the destruction of a portion or the entire site within the area of potential effects (APE).</li> <li>3. If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR), the applicant shall reconsider project plans in light of the high value of the cultural resource, and implement more substantial modifications to the proposed project that shall allow the site to be preserved intact, such as project redesign or capping the site with fill soil.</li> <li>4. Standard archaeological collection and/or excavation units may be used, with methods consistent with those employed during previous investigations in the region and with Secretary of Interior's standards. Following completion of the excavations, all cultural materials shall be washed, cataloged, and analyzed. Technical analyses may include artifact analysis, radiocarbon dating, obsidian hydration, pollen and protein residue, and other analyses as needed to describe the cultural materials and archaeological deposits. Prior to artifact processing, the consulting tribes will be afforded the opportunity to identify objects/materials that should not be exposed to washing and certain kinds of destructive analyses and that may be treated according to separate, culturally-specific and appropriate methods and disposition. A data recovery report shall be prepared and filed with the CRM, and the California Historical Resources Information System Information Center at California State University, Bakersfield.</li> <li>5. The CRM shall provide for the permanent curation of recovered materials from Edwards Air Force Base (AFB) property. Curation does not negate artifact relocation described under MM 3.6-7a, rather artifact relocation and reburial will be the preference whenever possible.</li> </ol> <p>For archaeological sites considered individually eligible for NRHP/CRHR listing (or considered contributors to the Bissell Basin Archaeological District) that can be avoided, reasonable protective measures shall be provided, including protective fencing around an avoided resource with an appropriate buffer, silt fencing to avoid indirect effects through project-related runoff, and other measures as applicable. In certain instances, avoidance through capping using sterile fill matrix, use of rubber mats, or other measures may be deemed appropriate to achieve avoidance. All decisions regarding the specific measures used to achieve preservation in place and capping will be the result of collaboration amongst consulting parties and the Air Force.</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>General avoidance and capping are two available avoidance measures on Edwards AFB property and on lands under County of Kern jurisdiction. These forms of avoidance satisfy CEQA Guidelines Section 15125.4(b)(3).</p> <p><b>MM 3.6-3a: Consultation Agreement and Cultural Resource.</b> Archaeological and Native American Resources Monitoring. Archaeological and Native American monitoring are both subject to consultation with the stakeholders under Section 106. As such, the requirements of various stakeholders must be considered and accommodation made wherever feasible. Therefore, specific archaeological and Native American monitoring details cannot be included herein. However, at a minimum it is expected that the developer shall retain a qualified archaeological monitor and a Native American monitor for project-related ground disturbing activities for the purpose of identifying and avoiding adverse effects to significant archaeological resources. The HPTP (MM 3.6-1a) shall provide details on archaeological and Native American monitoring, including monitor rotation schedules, lines of authority and communication, monitoring procedures and protocols, and documentation.</p> <p>Ground-disturbing activities include, but are not limited to, brush clearance, grubbing, excavation, trenching, grading, and drilling, or other activities deemed appropriate for monitoring identified in the consultation process. Areas requiring monitoring and the level of monitoring shall be developed by the Edwards AFB Cultural Resources Manager in coordination with the Applicant, the qualified archaeologist and consulting tribes, and shall be detailed in the MOA and HPTP for resources on Edwards AFB (as required by Mitigation Measure MM 3.6-1a). Any archaeological monitors shall be, or work under the direct supervision of, a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's standards for professional archaeology and shall be approved by the Air Force. The monitors shall be familiar with the types of historical and prehistoric resources that could be encountered within the project area.</p> <p>The archaeological monitor shall ensure that personnel performing ground-disturbing activities are displaying the appropriate decal on their hardhat demonstrating their CR Awareness training under Mitigation Measure MM 3.6-5a. The archaeological monitors shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. The archaeological monitors shall be present on the project site according to a schedule as detailed in the MOA and HPTP for resources on Edwards AFB (as required by Mitigation Measure MM 3.6-1a). The monitors shall maintain a daily log of activities, which will be appended to a final monitoring report that shall be submitted to the Edwards AFB Cultural Resources Manager, Kern County Planning and Natural Resources Department, and Southern San Joaquin Valley Archaeological Information Center. Specific monitoring reporting procedures shall be detailed in the MOA and HPTP for resources on Edwards AFB, (as required by Mitigation Measure MM 3.6-1a).</p> <p><b>MM 3.6-4a: Inadvertent Discoveries.</b> During project-level construction, operation and maintenance, and decommissioning, should cultural resources be discovered, all activity within 100 feet of the find shall stop and a qualified archaeologist shall be contacted to assess the significance of the find. The Cultural Resource Manager or the Kern County Planning and Community Development Department shall also be contacted. If the qualified archaeologist, in consultation with the Cultural Resource Manager or Kern County Planning and Community Development Department and Consulting Native American tribes, determines the resource is significant (i.e., qualifies as a Historic Property, Historical Resource, unique archaeological resource, TCR), or a contributor to the Bissell Basin Archaeological District, then the archaeologist shall determine, in consultation with the Cultural Resource Manager or Kern County Planning and Community Development Department, appropriate avoidance measures or other appropriate mitigation. Preservation in place shall be the preferred manner of mitigation to avoid effects to significant cultural resources. If it is demonstrated that resources cannot be feasibly avoided, the qualified archaeologist shall implement the provisions for mitigative</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>treatments detailed in the MOA (as required by Mitigation Measure MM 3.6-1a). Work shall not resume within 100 feet of the discovery until permission is received from the Cultural Resource Manager (solar array project area) or Kern County Planning and Community Development Department (gen-tie line route project area). In the event of inadvertent discovery of human remains or potential funerary objects or sacred objects, all work shall be halted within a 100-foot radius and temporary protective measures shall be implemented.</p> <p>On non-federally owned land, the project proponent shall immediately halt work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the California Environmental Quality Act Guidelines. If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a most likely descendent for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.</p> <p>On federally owned land, the Air Force shall be notified and human remains and associated funerary objects shall be treated pursuant to the Native American Graves Protection and Repatriation Act and in accordance with the MOA and HPTP, and the NAGPRA Plan of Action (included as part of the HPTP).</p> <p><b>MM 3.6-5a: Worker Cultural Awareness Training Program.</b> Prior to the commencement of ground-disturbing activities, and for the duration of construction activities, a Worker Cultural Awareness Training Program shall be provided to all construction personnel prior to their commencing work at the project site.</p> <ol style="list-style-type: none"> <li>1. The training shall be prepared and conducted by a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology. Representatives from the consulting Native American tribes shall also provide training, at their discretion. The training may be in the form of a video.</li> <li>2. A sticker shall be placed on hard hats indicating that the worker has completed the environmental/cultural training. Construction personnel 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.</li> <li>3. 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 Air Force Cultural Resources Manager.</li> </ol> <p>The purpose of the Cultural Awareness Training Program shall be to inform and train construction personnel of the types of cultural resources that may be encountered during construction, and to bring awareness to personnel of actions to be taken in the event of a cultural resources discovery. This may include: a discussion of applicable cultural resources statutes, regulations and related enforcement provisions; an overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups; samples or visuals of artifacts that might be found in the project area; a discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>construction; and procedures to be followed in the event of an inadvertent discovery, as specified by the MOA and HPTP (MM 3.6-1a).</p> <p><b>MM 3.6-6a Public Outreach and Education Program.</b> The MOA and HPTP (MM 3.6-2) shall outline the specific requirements for implementation of a Public Outreach and Education Program. The goal of this program will be to provide members of the public, including tribal members, media for interacting with the prehistoric aboriginal past of the Bissell Basin and surrounding region. Media platforms will vary, but will include hard media, such as story-telling displays, displays of archaeological material in an interpretive format (may include traveling displays), and digital media (e.g., internet based content). The HPTP will identify parties responsible for contributing content and producing deliverables.</p> <p><b>MM 3.6-7a Relocation of Cultural Material.</b> The MOA and HPTP (MM 3.6-2) shall outline the specific requirements and methods for implementation of an artifact relocation plan, a plan that shall be developed prior to project implementation and shall be carried out prior to construction for previously identified resources and during construction for inadvertent discoveries. The HPTP will specify the decision making process required to identify artifacts in field settings suitable for relocation, versus those that require formal relocation or repatriation. The CRM and consulting tribes have determined that not all cultural material that will be impacted by project construction requires formal curation. Moreover, recognizing that these artifacts will be disturbed during construction, the collection of disturbed artifacts and placement in a precisely recorded nearby location is considered suitable treatment of these materials, particularly during archaeological and tribal monitoring of construction.</p>	
<p><b>Impact 3.6-2:</b> The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	<p>Potentially significant</p>	<p><b>MM 3.6-8a: Paleontological Resources Mitigation and Monitoring Plan.</b> The developer shall retain a qualified paleontologist to prepare a Paleontological Resources Mitigation and Monitoring Plan for implementation during construction. The minimum requirement for professional paleontological work is a 4-year undergraduate program and Master of Science degree, although a doctoral degree may be required for certain specialties; a qualified paleontologist is one that has experience in research, field, and laboratory methods for paleontological resources, including experience in fossil salvage, stratigraphy, fossil preparation, and identification, with experience in California. The Paleontological Resources Mitigation and Monitoring Plan shall be submitted to the Air Force for review and approval prior to the start of grading or construction and shall include the following:</p> <ol style="list-style-type: none"> <li>1. Procedures for the discovery, recovery, and salvage of paleontological resources encountered during construction, if any, in accordance with standards for recovery established by the Society of Vertebrate Paleontology.</li> <li>2. Verification that the developer has an agreement with a recognized museum repository (such as the Natural History Museum of Los Angeles County), for the disposition of recovered fossils and that the fossils shall be prepared prior to submittal to the repository as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or cataloged).</li> <li>3. Description of monitoring reports that will be prepared, which shall include daily logs and a final monitoring report with an itemized list of specimens found to be submitted to the Air Force and the Natural History Museum of Los Angeles County within 90 days of the completion of monitoring.</li> </ol> <p><b>MM 3.6-9a: Worker Paleontological Resources Awareness Training Program.</b> Prior to the commencement of ground-disturbing activities, and for the duration of construction activities, a Worker Paleontological Awareness Training Program shall be provided to all construction personnel prior to their commencing work at the project site. The training may be performed in concert with the archaeological/cultural resources training (MM 3.6-4a) at the onset of the project. The training shall be prepared and conducted by a qualified paleontologist. The training may be in the form of a video. The training may be discontinued when</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>ground disturbance is completed or suspended, but must resume when ground-disturbing activities resume. A sticker shall be placed on hard hats indicating that the worker has completed the environmental/cultural training. Construction personnel 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. 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 Edwards AFB Cultural Resource Manager.</p> <p>The purpose of the Paleontological Awareness Training Program shall be to inform and train construction personnel of the types of paleontological resources that may be encountered during construction, and to bring awareness to personnel of actions to be taken in the event of a paleontological resources discovery. This may include: a discussion of applicable paleontological resources statues, regulations and related enforcement provisions; samples or visuals of fossils that might be found in the project area; implementation of the Paleontological Resources Mitigation and Monitoring Plan; and procedures to be followed in the event of an inadvertent discovery.</p> <p><b>MM 3.6-10a: Paleontological Resources Monitoring.</b> The developer shall provide for a qualified paleontologist or an individual working under direct supervision of a qualified paleontologist to monitor construction activities in areas where deeper excavations may be needed (greater than 10 feet). The duration and timing of the monitoring, which shall be set in the Paleontological Resources Mitigation and Monitoring Plan, shall be determined by the qualified paleontologist, in consultation with the Air Force and based on the grading plans. Initially, all excavation or grading activities deeper than 10 feet shall be monitored. However, during the course of monitoring, if the paleontologist can demonstrate that the level of monitoring should be reduced, the paleontologist, in consultation with the Air Force, may adjust the level of monitoring to circumstances warranted. If a resource is encountered, the monitor will implement the procedures of the Paleontological Resources Mitigation and Monitoring Plan. If recovery of a large or unusually productive fossil occurrence is necessary, the following actions shall be taken:</p> <ol style="list-style-type: none"> <li>1. The paleontological monitor shall immediately notify the project developer, who shall contact the Air Force.</li> <li>2. Construction activities in the immediate vicinity of the site shall stop until authorization for work to continue is provided by the Air Force.</li> <li>3. Treatment and subsequent donation of fossils to a repository, along with the preparation of a report documenting the absence or discovery of fossil-related resources will be performed in accordance with the Paleontological Resources Mitigation and Monitoring Plan.</li> </ol>	
<p><b>Impact 3.6-3:</b> The project would disturb human remains, including those interred outside of formal cemeteries.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measure MM 3.6-4a: Inadvertent Discoveries.</p>	<p>Less than significant</p>
<p><b>Cumulative</b></p>	<p>Potentially significant</p>	<p>Mitigation Measures MM 3.6-1a through MM 3.6-11a</p>	<p>Less than significant</p>
<p><b>3.7 Geology, Minerals, and Soils</b></p>			
<p><b>Impact 3.7-1:</b> The project would expose people or structures to potential substantial adverse effects, including the risk of loss,</p>	<p>Less than significant</p>	<p><b>MM 3-7.1a: Conduct Geotechnical Study.</b> Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
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.		<ol style="list-style-type: none"> <li>1. The geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to, the following:                             <ol style="list-style-type: none"> <li>a. Location of fault traces and potential for surface rupture and groundshaking potential;</li> <li>b. Maximum considered earthquake and associated ground acceleration;</li> <li>c. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows;</li> <li>d. Stability of any existing or proposed cut-and-fill slopes;</li> <li>e. Collapsible or expansive soils;</li> <li>f. Foundation material type;</li> <li>g. Potential for wind erosion, water erosion, sedimentation, and flooding;</li> <li>h. Location and description of unprotected drainage that could be impacted by the proposed development; and,</li> <li>i. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.</li> </ol> </li> <li>2. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to 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 sighting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.</li> <li>3. The Kern County Public Works Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided.</li> </ol>	
<b>Impact 3.7-2:</b> The project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	Less significant	than None required	Less than significant
<b>Impact 3.7-3:</b> The project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction.	Less significant	than None required	Less than significant
<b>Impact 3.7-4:</b> The project would result in substantial soil erosion or the loss of topsoil.	Less significant	than None required	Less than significant
<b>Impact 3.7-5:</b> The project is located on a geologic unit or soil	Less significant	than None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
that is unstable, or that would become unstable as result of the project, and potentially result in onsite or onsite landslide, lateral spreading, subsidence, liquefaction, or collapse.	Less significant	None required	Less than significant
<b>Impact 3.7-6:</b> The project is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Less significant	None required	Less than significant
<b>Impact 3.7-7:</b> The project has soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.	Less significant	<b>MM 3.7-2a: Assess Soil Permeability.</b> Prior to the issuance of any building permit for the operation and maintenance facilities, the project proponent 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 and leach fields. A site specific analysis of soil permeability shall be performed by a California licensed Geotechnical Engineer that demonstrates project soils can adequately support the use of a septic disposal system. A plan shall be submitted to the Kern County Planning and Natural Resources Department indicating siting or the septic system and leach fields as approved by the Kern County Environmental Health Services Division.	Less than significant
<b>Impact 3.7-8:</b> The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	Less significant	None required	Less than significant
<b>Impact 3.7-9:</b> The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Less significant	None required	Less than significant
<b>Cumulative</b>	Less significant	None required	Less than significant
<b>3.8 Greenhouse Gas Emissions</b>			
<b>Impact 3.8-1:</b> The project would generate greenhouse gas emissions, either directly or indirectly, that may have an impact on the environment.	Less significant	None required	Less than significant
<b>Impact 3.8-2:</b> The project could conflict with an applicable plan,	Less significant	None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
policy, or regulation adopted for the purpose of reducing the emissions of GHGs.			
<b>Cumulative</b>	Less than significant	None required	Less than significant

**3.9 Hazardous Materials and Safety**

<p><b>Impact 3.9-1:</b> The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.</p>	<p>Potentially significant</p>	<p><b>MM 3.9-1a: Hazardous Materials Business Plan.</b> Prior to the issuance of grading or building permits, the project proponent shall prepare a Hazardous Materials Business Plan and submit it to Kern County for review and approval.</p> <ol style="list-style-type: none"> <li>1. The Hazardous Materials Business Plan shall:                             <ol style="list-style-type: none"> <li>a. Delineate hazardous material and hazardous waste storage areas.</li> <li>b. Describe proper handling, storage, transport, and disposal techniques.</li> <li>c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill.</li> <li>d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction.</li> <li>e. Establish public and agency notification procedures for spills and other emergencies including fires.</li> <li>f. Include procedures to avoid or minimize dust from existing residual pesticide and herbicide use that may be present on the site.</li> </ol> </li> <li>2. The project proponent 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.</li> <li>3. A copy of the approved Hazardous Materials Business Plan shall be submitted to the Air Force.</li> </ol> <p><b>MM 3.9-2a: Spill Prevention, Control, and Countermeasure Plan.</b> Prior to the issuance of grading or building permits by the County and/or a Notice to Proceed from the Air Force, the developer shall prepare and submit a Spill Prevention, Control, and Countermeasure Plan to Kern Count and to the Air Force for review. The plan will be for the storage and use of transformer oil, gasoline, or diesel fuel at the site in quantities of 660 gallons or greater. The purpose of the plan will be to mitigate the potential effects of a spill of transformer oil, gasoline, or diesel fuel. The plan shall include design features of the project that will contain accidental releases of petroleum and transformer oil products from onsite fuel tanks and transformers.</p> <p><b>MM 3.9-3a: Herbicide Control.</b></p> <ol style="list-style-type: none"> <li>1. The project proponent shall continuously comply with Edwards Integrated Pest Management Plan and the following:                             <ol style="list-style-type: none"> <li>a. The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use. Personnel applying herbicides shall have all appropriate state and local herbicide applicator licenses and comply with all state and local regulations regarding herbicide use.</li> <li>b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.</li> <li>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</li> </ol> </li> </ol>	<p>Less than significant</p>
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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul> <p>2. The project proponent shall continuously comply with the following:</p> <ul style="list-style-type: none"> <li>a. The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use. Personnel applying herbicides shall have all appropriate state and local herbicide applicator licenses and comply with all state and local regulations regarding herbicide use.</li> <li>b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	
<p><b>Impact 3.9-2:</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.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 3.9-1a through MM 3.9-3a, and:</p> <p><b>MM 3.9-4a: Asbestos-containing Material.</b> The project proponent shall continuously comply with the following:</p> <ul style="list-style-type: none"> <li>1. In the event that suspect asbestos-containing materials (almost anything other than unpainted metal, glass or wood, to include soil in certain locations/circumstances) are uncovered and/or disturbed during project construction, work at the project site shall immediately halt and an appropriate certified asbestos hazardous materials professional (typically a California Certified Asbestos Consultant) shall be contacted and brought to the project site to make a proper assessment of the suspect materials.</li> <li>2. All potentially friable asbestos-containing materials shall be removed in accordance with Federal, State, and local laws and the National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines prior to ground disturbance that may disturb such materials. Per the Asbestos NESHAP "... prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM."</li> <li>3. All demolition activities shall be undertaken in accordance with California Occupational Safety and Health Administration standards, as contained in Title 8 of the California Code of Regulations, Section 1529, to protect workers from exposure to asbestos. Materials containing more than 1 percent asbestos shall also be subject to Eastern Kern Air Pollution Control District's regulations. Asbestos in soil is or</li> </ul>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>may be further regulated by California Air Resources Board. Demolition/Renovation shall be performed in conformance with Federal, State, and local laws and regulations, to include the Asbestos NESHAP so that construction workers and/or the public avoid significant exposure to asbestos and asbestos-containing materials.</p>	
		<p><b>MM 3.9-5a: Herbicide Application.</b> The project proponent shall continuously comply with the following: Herbicides shall be applied in accordance with the current Edwards Air Force Base Integrated Pest Management Plan. Physical, mechanical, or other measures must be used to remove or control weeds. Least hazardous, but effective, herbicides shall be used as a last resort.</p>	
<p><b>Impact 3.9-3:</b> Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.</p>	Potentially significant	None required	Less than significant
<p><b>Impact 3.9-4:</b> Exposes 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.</p>	Less than significant	<p><b>MM 3.9-6a: Fire Safety Plan.</b> Prior to the issuance of grading or building permits, the project proponent shall develop and implement a fire safety plan for use during construction and operation. The project proponent will submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. The fire safety plan will contain notification procedures and emergency fire precautions including, but not limited to the following:</p> <ol style="list-style-type: none"> <li>1. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters will be in good working order.</li> <li>2. Light trucks and cars with factory-installed (type) mufflers will be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition.</li> <li>3. Fire rules will be posted on the project bulletin board at the contractor's field office and areas visible to employees.</li> <li>4. Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials.</li> <li>5. 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.</li> <li>6. The project proponent shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.</li> </ol>	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.9-1a through MM 3.9-6a	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.10 Infrastructure</b>			
<b>Impact 3.10-1:</b> The project would exceed wastewater treatment requirements of the applicable regional water quality control board.	Potentially significant	<b>MM 3.10-1a: Coordinate with Utility Service Providers.</b> Prior to construction, the developer shall coordinate with appropriate utility service providers and related agencies to determine the location of utilities and ensure that adequate wastewater treatments exist. The developer will also incorporate into construction specifications the requirement that the contractor develop a plan to reduce service interruptions. The plan shall be approved by the Air Force and submitted to appropriate utility providers. Utilities to be addressed in the plan shall include, but may not be limited to: water, recycled water, sewer, gas, electricity, telephone, cable.	Less than significant
<b>Impact 3.10-2:</b> Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Potentially significant	None required	Less than significant
<b>Impact 3.10-3:</b> Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Less significant	than Mitigation Measure MM 3.10-1a	Less than significant
<b>Impact 3.10-4:</b> The project has sufficient water supplies available to serve the project from existing entitlements and resources, and new or expanded entitlement is not needed.	Less significant	than None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.10-5:</b> Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.	Potentially significant	Implement Mitigation Measure MM 3.11-1a, and: <b>MM 3.10-2a: Recycling Coordinator.</b> During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. 1. An onsite Recycling Coordinator shall be designated by the project proponent to facilitate recycling as part of the Maintenance, Recycling and Trash Abatement and Pest Management Program. 2. 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. 3. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. 4. Contact information of the coordinator shall be provided to Kern County prior to issuance of building permits.	Less than significant
<b>Impact 3.10-6:</b> Fail to comply with federal, state, and local statutes and regulations related to solid waste.	Less than significant	None required	Less than significant
Cumulative	Potentially significant	Mitigation Measures MM 3.10-1a, MM 3.10-2a, MM 3.11-1a, and MM 3.7-2a.	Less than significant
<b>3.11 Land Use</b>			
<b>Impact 3.11-1:</b> The project would conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the projects (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	None required	Less than significant
<b>Cumulative</b>	Potentially significant	<b>MM 3.11-1a: Decommission Plan.</b> Except as otherwise agreed to in writing by the Government, Lessee shall, at no cost to the Government: 1. Remove all of the Improvements from the Leased Premises. Lessee shall restore the Leased Premises to a condition substantially similar to that which existed on the Effective Date of the Lease, including but not limited to reestablishment (if applicable) vegetation to control erosion in accordance with Government standards. 2. No later than 3 years prior to the Restoration Deadline, Lessee shall provide to the Government a report prepared by a construction and demolition expert reasonably acceptable to the Government, which report details and estimates the cost of satisfying the Removal and Restoration Obligation (the "Estimated Restoration Costs"), together with a written plan which sets forth how Lessee proposes to discharge its Removal and Restoration Obligation (an "Improvement Removal Report") and establish an	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>escrow account with a commercial escrow holder reasonably satisfactory to the Government and deposit into it the full amount of the Estimated Restoration Costs (“Demolition Reserve Account”).</p> <ol style="list-style-type: none"> <li>a. The Demolition Reserve Account shall be subject to procedures and controls to be set forth in a written agreement between Lessee, the Government and the escrow holder (“Demolition Reserve Escrow Agreement”).</li> <li>b. If Lessee does not satisfy its Removal and Restoration Obligation on or before the Restoration Deadline (“Restoration Default”), the Government shall be entitled, in addition to other available remedies, to (i) take ownership of the Lessee Improvements without compensation therefore, or (ii) cause the Lessee Improvements to be removed or destroyed, and the Leased Premises to be restored at the expense of Lessee.</li> </ol>	
<b>3.12 Noise</b>			
<p><b>Impact 3.12-1:</b> Expose persons to or generate noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies.</p>	<p>Potentially significant</p>	<p><b>MM 3.12-1a: Noise Reduction.</b> To reduce temporary construction related noise impacts, the following shall be implemented by the project proponent:</p> <ol style="list-style-type: none"> <li>1. 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.</li> <li>2. The contractor shall ensure all construction equipment is equipped with manufacturers approved mufflers and baffles, where feasible.</li> <li>3. The construction contractor shall establish a Noise Disturbance coordinator for the project during construction. The Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The 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 Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to any ground disturbing activities commence.</li> </ol> <p>During all construction or decommissioning phases of the project, 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 (Municipal Ordinance Code 8.36.020).</p> <p><b>MM 3.12-2a: Public Notification.</b> Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent shall provide written notice to the public through mailing a notice.</p> <ol style="list-style-type: none"> <li>1. The mailing notice shall be to all residences within 1,000 feet of the project site, 15 days or less prior to construction activities. The notices shall include: The construction schedule, telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.</li> <li>2. 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.</li> <li>3. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Air Force and to Kern County.</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.12-2:</b> Would the project result in the exposure of persons to, or generate, excessive groundborne vibration or groundborne noise levels.	Less than significant	None required	Less than significant
<b>Impact 3.12-3:</b> Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Potentially significant	Mitigation Measures MM 3.12-1a and MM 3.12-2a	Less than significant
<b>Impact 3.12-4:</b> For a project located within the Kern County Airport Land Use Compatibility Plan (ALUCP), would the project expose people residing or working in the project area to excessive noise levels.	Less than significant	Mitigation Measures MM 3.12-1a and MM 3.12-2a	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.12-1a and MM 3.12-2a	Less than significant
<b>3.13 Public Services</b>			
<b>Impact 3.13-1:</b> The project would result in adverse physical impacts associated with the need for new or physically altered governmental facilities—the construction of which could cause significant environmental impacts—in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection and law enforcement services.	Less than significant	<p>Implement Mitigation Measure MM 3.9-6a, and:</p> <p><b>MM 3.13-1a: Funding for County Fire and Sheriff's Protection.</b> The project proponent shall implement the following mitigation steps at the project site:</p> <ol style="list-style-type: none"> <li>1. For facility operation, the project proponent shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$28.84 per 1,000 square feet of panel-covered ground for the facility operation and related onsite structures for the entire covered area of the project. The total amount shall be divided by the number of years of operation and paid on a yearly basis. If completed in phases, the annual amount shall be based on the square footage of ground covered by April 30 of each year. The amount shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year for each and every year of operation. Copies of payments made shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>2. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than \$1,000 per megawatt per year, then they will pay those taxes plus the amount necessary to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.</li> <li>3. The project proponent 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 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</li> </ol>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Equalization. The project proponent shall allow the County to use this sales tax information publicly for reporting purposes. 4. Prior to the issuance of any building permits on the property, the project proponent 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 the local Kern County communities. The project proponent 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.	
<b>Cumulative</b>	Less than significant	Mitigation Measures MM 3.13-1a and MM 3.9-6a	Less than significant
<b>3.14 Socioeconomics and Environmental Justice</b>			
<b>Cumulative</b>	Less than significant	No mitigation measures are recommended to address socioeconomic impacts related to Alternative A, Alternative B, or Alternative C.	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.15 Transportation</b>			
<p><b>Impact 3.15-1:</b> The project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.</p>	<p>Less than significant</p>	<p><b>MM 3.15-1a: Traffic Control Plan.</b> Prior to the issuance of construction or building permits, the project proponent shall:</p> <ol style="list-style-type: none"> <li>1. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:               <ol style="list-style-type: none"> <li>a. Timing of deliveries of heavy equipment and building materials.</li> <li>b. Directing construction traffic with a flag person.</li> <li>c. 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.</li> <li>d. Ensuring access for emergency vehicles to the project sites.</li> <li>e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections.</li> <li>f. Maintaining access to adjacent property.</li> <li>g. 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.</li> </ol> </li> <li>2. Obtain all necessary encroachment permits for the work within the road right-of-way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department and the Kern County Public Works Department-Development Review.</li> <li>3. Prior to construction, the project proponent shall submit engineering drawings of proposed access road design for the review and approval of the Kern County Public Works Department.</li> <li>4. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the state and/or Kern County.</li> <li>5. Submit documentation that identifies the roads to be used during construction. The project proponent shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department.</li> <li>6. Within 30 days of completion of construction, the project proponent shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent's engineer, shall determine the extent of remediation required, if any.</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.15-2:</b> The project would conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards developed by the County congestion management agency for designated roads or highways.	Less than significant	Implement Mitigation Measure MM 3.15-1a	Less than significant
<b>Impact 3.15-3:</b> The project would substantially increase hazards due to a design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Potentially significant	Implement Mitigation Measure MM 3.15-1a	Less than significant
<b>Impact 3.15-4:</b> The project would result in inadequate emergency access.	Less than significant	Implement Mitigation Measure MM 3.15-1a	Less than significant
<b>Cumulative</b>	Potentially significant	Implement Mitigation Measure MM 3.15-1a	Less than significant

**3.16 Water Resources**

<b>Impact 3.16-1:</b> The project could violate water quality standards or waste discharge requirements.	Potentially significant	<p>Implement Mitigation Measure MM 3.9-1a, and:</p> <p><b>MM 3.16-1a: Stormwater Pollution Prevention Plan.</b> Prior to issuance of a grading permit for construction or decommissioning, the developer shall submit a Stormwater Pollution Prevention Plan to the Kern County Engineering, Surveying, and Permit Services Department that specifies best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment and other pollutants from moving offsite and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Best management practices categories employed onsite would include erosion control, sediment control, good housekeeping, and post-construction. Best management practices for the construction phase shall include, but not be limited to, those listed below.</p> <ol style="list-style-type: none"> <li>1. Erosion Control               <ol style="list-style-type: none"> <li>a. Use of existing roadways to the maximum extent possible</li> <li>b. Limiting grading to the minimum area necessary for construction, operation and decommissioning of the project</li> <li>c. Encourage maintenance of existing topography and limit vegetation disturbance/removal such as through mowing to the maximum extent possible</li> </ol> </li> <li>2. Sediment Control               <ol style="list-style-type: none"> <li>a. Implementing fiber rolls and sand bags around drainage areas and the site perimeter</li> </ol> </li> </ol>	Less than significant
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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>b. Stockpiling and disposing of demolition debris, concrete, and soil properly</li> <li>c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas</li> </ul> <p>3. Good Housekeeping</p> <ul style="list-style-type: none"> <li>a. Implement proper protections for fueling and maintenance of equipment and vehicles</li> <li>b. Manage waste and aggressively control litter</li> </ul> <p>4. Post Construction</p> <ul style="list-style-type: none"> <li>a. Stabilize soil in disturbed areas either by revegetation or chemical stabilizer</li> <li>b. Implement any necessary drainage mitigation</li> <li>c. Revegetate any disturbed areas.</li> </ul>	
		<p><b>MM 3.16-2a: Federal Emergency Management Agency Flood Zone Mapping and Strategic Construction Siting and Facility Placement.</b> Prior to the preparation of Final Flood Hazard Assessment (Mitigation Measure MM 3.16-3a) and Grading Plan (Mitigation Measure 3.16-4a), the developer will consult with the Federal Emergency Management Agency for flood zone mapping services of the estimated area of impact on Edwards Air Force Base that is currently unmapped. Once flood risks are determined by the Federal Emergency Management Agency, these official flood zone boundaries will be incorporated into the final version of all technical hydrology and flood-related documents prepared for the project so that appropriate design recommendations for the projects can be made. Based on specific flood zone information, construction staging areas and final project structures would be sited to avoid existing hydrologic features (including flood zones and drainages) to the maximum extent possible.</p>	
		<p><b>MM 3.16-3a: Final Flood Hazard Assessment.</b> Prior to construction, a Final Flood Hazard Assessment shall be prepared for the project. The Final Flood Hazard Assessment shall describe the existing flood risks onsite and how the project structures would be designed to incorporate the requirements of the Kern County Floodplain Management Ordinance. The existing flood risks on the Edwards Air Force Base portion of the site shall be determined through developer coordination with the Federal Emergency Management Agency (see Mitigation Measure MM 3.16-2a). For any solar arrays installed within flood zones, final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites shall be graded to direct potential flood waters into channels adjacent to the existing and proposed right of ways without increasing the water surface elevations more than 1 foot or as otherwise required by Kern County's Floodplain Management Ordinance. The Final Flood Hazard Assessment shall be approved by the Floodplain Management Section of the Kern County Public Works Department prior to the issuance of a grading permit for the project.</p>	
		<p><b>MM 3.16-4a: Grading Plan.</b> Prior to commencement of construction or decommissioning activities, the developer shall prepare a Grading Plan per the Kern County Grading Code and Kern County Grading Guidelines. The Grading Plan shall include the location of all existing drainages onsite, project grading details and the drainage devices and erosion control features that would be installed onsite to minimize excess site runoff, erosion and sedimentation. Examples of features installed onsite that would minimize runoff, erosion and sedimentation include energy dissipaters, and water quality inlets. The plan shall also disclose flood protection measures implemented for structures onsite as identified in the Flood Hazard Assessment (see Mitigation Measure MM 3.16-3a). Flood zone information used in the preparation of the Grading Plan will be based on flood zone maps obtained from developer consultation with FEMA (see Mitigation Measure MM</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		3.7-2a). The Grading Plan shall be approved by Kern County Public Works – Engineering prior to issuance of a grading permit.	
<b>Impact 3.16-2:</b> The project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	Potentially significant	None required	Less than significant
<b>Impact 3.16-3:</b> The project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation and/or flooding onsite or off site.	Potentially significant	Mitigation Measures MM 3.16-1a through MM 3.16-4a	Less than significant
<b>Impact 3.16-4:</b> The project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Mitigation Measures MM 3.16-1a, MM 3.16-4a, and: <b>MM 3.16-5a: Hydrologic Analysis and Drainage Plan.</b> Prior to the issuance of a grading permit, the project proponent shall complete a hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following: <ol style="list-style-type: none"> <li>1. 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.</li> <li>2. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.</li> <li>3. 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 onsite or onsite.</li> <li>4. The final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be graded to direct potential flood waters without increasing the water surface elevations more than 1 foot or as required by Kern County’s Floodplain Ordinance.</li> <li>5. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards, and approved by the Kern County Public Works Department prior to the issuance of grading permits.</li> </ol>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.16-5:</b> The project could otherwise substantially degrade water quality.	Potentially significant	Mitigation Measures MM 3.16-1a through MM 3.16-4a, and MM 3.7-2a	Less than significant
<b>Impact 3.16-6:</b> The project could place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Mitigation Measures MM 3.16-2a through MM 3.16-4a	Less than significant
<b>Cumulative</b>	Potentially significant	Implement Mitigation Measures MM 3.9-1a, MM 3.16-1a through MM 3.16-5a, and MM 3.7-2a	Less than significant
<b>5 Consequences of Project Implementation</b>			
<b>Impact 5-1:</b> The project could result in an inefficient, wasteful, and/or unnecessary use of energy for transportation of materials and worker commutes.	Potentially Significant	<p><b>MM 5-1a: Transportation Energy Management Plan.</b> The developer shall develop and implement a construction- and decommissioning-phase Transportation Energy Management Plan in consultation with Kern County and Edwards AFB to reduce construction- and decommissioning-related transportation energy consumption. The plan shall include but not be limited to the following measures:</p> <ol style="list-style-type: none"> <li>1. Require that onsite equipment and vehicle operators minimize equipment and vehicle idling time either by shutting equipment off when not in use or by limiting idling time to a maximum of 5 minutes.</li> <li>2. Designate a Transportation Energy Manager (TEM) to coordinate ridesharing by construction and decommissioning employees. The TEM shall encourage carpooling by posting commuter ride sign-up sheets, maintaining and posting an employee home zip code map.</li> <li>3. Provide priority parking onsite for vehicles with two or more passengers.</li> <li>4. When feasible, arrange for a single construction vendor who makes deliveries for several items.</li> <li>5. Plan construction delivery and waste hauling routes to eliminate unnecessary trips.</li> <li>6. The plan shall be submitted to Kern County and to Edwards AFB for review and approval prior to the start of construction.</li> </ol>	Less than significant

**TABLE ES-6**  
**SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED ACTION GENERATION TIE LINES (KERN COUNTY MITIGATION AUTHORITY)**

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.1 Aesthetics</b>			
<p><b>Impact 3.1-1:</b> Substantially degrade the existing visual character or quality of the site and its surroundings.</p>	<p>Potentially significant</p>	<p><b>MM 3.1-1b: Landscape Revegetation and Restoration Plan.</b> The following shall be implemented by the project proponent:</p> <ol style="list-style-type: none"> <li>1. Prior to final onsite inspections, groupings of drought-tolerant plants (including relocation of Joshua trees as described in Mitigation Measures MM 3.5-14b), shall be planted along the generation tie line routes where transmission pole structures are constructed and where adjoining property is zoned for residential use. (E [Estate Residential], R-1 [Low-Density Residential], R-2 [Medium-Density Residential], R-3 [High-Density Residential], or PL (Platted Lands) zoning). Drought tolerant species shall consist of locally endemic plants that currently exist on the generation tie-line sites as described in the Biological Resources Technical Report for the Gen-Tie Routes for Edwards Air Force Base Solar EUL Project (Dudek, 2018) and shall extend approximately 25 feet on either side of the transmission pole structures. This requirement may be requested to be waived should the adjacent property be owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency submit correspondence to the Kern County Planning and Natural Resources Department requesting this requirement be waived.</li> <li>2. Should the project proponent or agency sell the adjacent property prior to a final site inspection, drought-tolerant plants shall be planted prior to the sale. If such landscaping is required, it must be continuously maintained on the tie-line sites by the project proponent, in accordance with Section 19.86 (Landscaping Standards) of the Kern County Zoning Ordinance.</li> <li>3. Prior to the commencement of operations, the project proponent must submit a Landscape Revegetation and Restoration Plan for the generation tie-line routes to the Kern County Planning and Natural Resources Department for approval. The plan shall include, but not limited to the following:                         <ol style="list-style-type: none"> <li>a. Where feasible, root balls shall be maintained during vegetation clearing to maintain soil stability and ultimately vegetation regrowth following construction.</li> <li>b. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish revegetation.</li> <li>c. In areas temporarily disturbed during generation tie-line installation (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with native seed mix or native plants and/or allowed to revegetate with existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, and maintenance roads do not require revegetation.</li> <li>d. 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. Seed mix shall be hydro-seeded with pure live seed of habitat-appropriate, fast-germinating, weed-free native seed varieties, and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. An appropriate hydraulic mulch and tackifier shall be used to protect and encapsulate the seed mixture to promote successful germination. Additional mulch or fertilizer shall not be applied.</li> <li>e. All disturbed soil areas should be hydro-seeded per the determination of the SWPPP recommendations. Imprinting is recommended during hydro-seeding.</li> </ol> </li> </ol>	<p>Significant and unavoidable</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>f. 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>g. The plan must include the approved native seed mix, a relative timeline for seeding the routes and a percentage of the routes to be covered, detail the consultation efforts completed and the methods that comply with wildlife agency regulations and prohibition of the use of toxic rodenticides.</p> <p>h. The revegetation and restoration of the generation tie-line sites, shall be monitored annually for a 3-year period, and an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department during the 3-year period. Ground cover shall be continuously maintained on the site by the project proponent. The 3-year monitoring program is intended to ensure the site naturally achieve native plant diversity, establishes perennials, and is consistent with ground cover conditions prior to implementation of the project, where feasible.</p> <p><b>MM 3.1-2b: Recycling and Trash Abatement.</b> Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program for the gen-tie construction and decommissioning activities shall be submitted to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:</p> <ol style="list-style-type: none"> <li>1. The project proponent shall clear debris from the generation tie line area daily during the construction and decommissioning activities.</li> <li>2. Signs shall be clearly established with contact information for the project proponent’s maintenance staff. Maintenance staff shall respond within 2 days to requests for additional cleanup of debris at gen-tie installation sites. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>3. Daily construction trash removal with recycling program during generation tie line installation. Pest/rodent barriers for all receptacles shall be detailed.</li> </ol> <p><b>MM 3.1-3b: Generation-tie Line Lighting Standards.</b> The project shall continuously comply with the following:</p> <p>Generation tie line project lighting shall comply 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 extend below the shields. A lighting plan shall be submitted and approved.</p>	
<p><b>Impact 3.1-2:</b> Create a new source of substantial light or glare that would adversely affect day or nighttime views in this area.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 3.1-1b</p>	<p>Less than significant</p>
<p><b>Cumulative</b></p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 3.1-1b through MM 3.1-3b,</p>	<p>Significant and unavoidable</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.2 Agricultural Resources</b>			
<b>Impact 3.2-1:</b> The project would conflict with existing zoning for agricultural use or a Williamson Act Contract.	Less than significant	None required	Less than significant
<b>Impact 3.2-2:</b> Involves other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.	Less than significant	None required	Less than significant
<b>Cumulative</b>	Less than significant	None required	Less than significant
<b>3.3 Air Quality</b>			
<b>Impact 3.3-1:</b> The project would conflict with or obstruct implementation of the applicable air quality plan.	Significant and unavoidable	<p><b>MM 3.3-1b: Fugitive Dust Control Measures.</b> The project proponent shall ensure construction of the generation tie-lines shall be conducted in compliance with applicable rules and regulations set forth by the Eastern Kern Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive and any other measures to reduce fugitive dust emissions may be required by appropriate agencies to respond to urgent issues on site:</p> <ol style="list-style-type: none"> <li>1. Land Preparation, Excavation and/or Demolition. The following dust control measures shall be implemented:               <ol style="list-style-type: none"> <li>a. All soil being actively 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 suppressant.</li> <li>b. After active gen-tie construction activities, soil shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods.</li> <li>c. All unpaved construction and site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent.</li> <li>d. Clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over 1 hour), or when dust plumes of 20% 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.</li> <li>e. All trucks entering or leaving the site will cover all loads of soils, sands, and other loose materials, or be thoroughly wetted with a minimum freeboard height of one foot.</li> <li>f. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.</li> <li>g. Stockpiles of soil or other fine loose material shall be stabilized by tarp covering, watering or other appropriate method to prevent wind-blown fugitive dust.</li> </ol> </li> </ol>	Significant and unavoidable

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>h. 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 or covered with tarps.</li> <li>i. Prior to gen-tie construction, wind breaks (such as chain-link fencing including a wind barrier) shall be installed in areas where appropriate.</li> <li>j. 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.</li> <li>k. When grading is unavoidable, it is to be phased and done with the application of a non-toxic soil stabilizer or soil weighting agent, or alternative soil stabilizing methods.</li> <li>l. Where feasible, plant roots shall be left in place to stabilize the soil.</li> <li>m. Reduce and/or phase the amount of the disturbed area (e.g., grading, excavation) where possible.</li> </ul>	
		<p>2. Generation tie-line construction. After active clearing, grading, and earth moving is completed within any portion of the tie-line routes, the following dust control practices shall be implemented:</p> <ul style="list-style-type: none"> <li>a. Dust suppressant shall be used on the same day or day immediately following the cessation of activity for a particular area where further activity is not planned.</li> <li>b. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas where planned after installation of the generation tie-lines.</li> <li>c. All unpaved road areas used for gen-tie construction or decommissioning shall be treated with a dust suppressant or graveled to prevent excessive dust.</li> <li>d. The project proponent shall use dust suppression measures during road surface preparation activities, including grading and compaction.</li> <li>e. Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV) equal to or greater than 100 centimeters per second (cm/S).</li> <li>f. Wind barrier fencing or screening shall be installed, when appropriate.</li> </ul>	
		<p>3. Vehicular Activities. During all phases of generation tie-line construction, the following vehicular control measures shall be implemented:</p> <ul style="list-style-type: none"> <li>a. On-site vehicle speed shall be limited to 10 miles per hour on unpaved areas within the generation tie-line areas. Vehicles may travel up to 25 miles per hour on stabilized unpaved roads (application of palliatives, gravel, etc. that reduces the erosion potential of the soil) as long as such speeds do not create visible dust emissions.</li> <li>b. Visible speed limit signs shall be posted at main ingress point(s) on generation tie-line sites.</li> <li>c. All areas with vehicle traffic such as the main entrance roadway to the generation tie-line installation sites shall be graveled or treated with dust palliatives so as to prevent track-out onto public roadways.</li> <li>d. 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 1 foot of freeboard.</li> <li>e. Streets used by the project during generation tie-line installation shall be kept clean, and project-related accumulated silt shall be removed on at a minimum of once daily, or as necessary to prevent substantial offsite fugitive dust releases. The use of either dry rotary brushes (unless prior wetting) or blower devices is prohibited.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>f. Access to the generation tie-line installation sites shall be by means of an apron into the tie-line sites from adjoining surfaced roadways. The apron shall be surfaced or treated with dust suppressants. If site soils cling to the wheels of the vehicles, then a grizzly, wheel-washer, or other such device shall be used on the road exiting the tie-line sites, immediately prior to the pavement, to remove most of the soil material from vehicle tires.</li> <li>g. If site soils cling to the wheels of the vehicles, then a track out control device or other such device shall be used on the road exiting the generation tie line site, immediately prior to the pavement, to remove most of the soil material from vehicle tires.</li> </ul>	
		<p><b>MM 3.3-2b: Grading Plan.</b> Prior to the issuance of grading or building permits, the project proponent shall provide a comprehensive generation tie-line Phased Grading Plan for review by the Kern County Planning and Natural Resources Department to reduce fugitive dust emissions resulting from wind erosion at the site. The Phased Grading Plan shall:</p> <ol style="list-style-type: none"> <li>1. Identify a comprehensive grading schedule for the entire generation tie-line routes which demonstrates the following:               <ol style="list-style-type: none"> <li>a. <b>Minimal Grading.</b> Grading shall be minimized to limit the removal of topsoil and creation of loose soils. Only in areas where drainage improvements, structural foundations, service roads, and leveling of severe grades need to occur will grading that removes and recompacts the soil surface occur. Water and/or dust palliatives shall be immediately applied following any grading. Construction (installation of posts, roads, etc.) shall commence on areas that have undergone initial ground disturbance or grading within 20 calendar days.</li> <li>b. <b>Dust Suppression:</b> Application of water and/or dust palliatives shall be applied on an as-needed basis throughout generation tie-line construction to help reduce dust, especially during periods of high winds, and shall include use of (1) an eco-safe, biodegradable, liquid copolymer shall be used to stabilize and solidify any soil; and (2) A hydro mulch mixture composed of wood fiber mulch and an Environ-Mend binder may also be applied, where real-time weather conditions dictate that additional measures are necessary.</li> <li>c. <b>Water Suppression.</b> Water trucks shall transit across the generation tie line routes and construction access roads to suppress the fugitive dust from disturbed soils on roads and active working areas on a regular and as needed basis.</li> </ol> </li> <li>2. Minimize all grading activities to those areas necessary for project access and installation of generation tie lines. Construction shall commence on areas that have undergone initial grading within 20 calendar days.</li> <li>3. Identify, in addition to those measures required by the Eastern Kern Air Pollution Control District, all measures being undertaken during generation tie-line construction activities to ensure dust being blown off site is minimized. Measure may include, but are not limited to:               <ol style="list-style-type: none"> <li>a. Increased use of water and or use of dust suppressant.</li> <li>b. Pre-seeding and/or use of wood chips as permitted by the EKAPCD</li> <li>c. Construction of dust screening around the generation tie-line site.</li> </ol> </li> <li>4. <b>Revegetation Plan.</b> A Revegetation Plan shall be submitted for approval to the Kern County Planning and Natural Resources Department (per MM 3.1-1b). To minimize long term dust issues from the project, the generation tie-line routes shall be revegetated (consistent with existing site conditions). Root balls shall be maintained during vegetation clearing to maintain soil stability and ultimately vegetation regrowth following</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>construction of routes. Following construction completion of generation tie-line routes, the gen-tie areas shall be reseeded with native vegetation.</p> <p><b>MM 3.3-3b: Construction Equipment Standards.</b> The project proponent and/or its contractors shall implement the following measures during construction of the project:</p> <ol style="list-style-type: none"> <li>1. All equipment shall be maintained in accordance with the manufacturer's specifications.</li> <li>2. 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.</li> <li>3. No individual piece of construction equipment shall operate longer than 8 consecutive hours per day.</li> <li>4. Electric equipment shall be used whenever possible in lieu of diesel or gasoline-powered equipment.</li> <li>5. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOx emissions.</li> <li>6. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.</li> <li>7. Prohibit the use of heavy-equipment during first- or second-stage smog alerts and suspend all construction activities during second-stage smog alerts.</li> <li>8. Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the extent feasible.</li> <li>9. Require that trucks and vehicles in loading or unloading queues have their engines turned-off when not in use.</li> <li>10. Off-road equipment engines over 50 horsepower shall be Tier 2 certified or higher (unless Tier 2 equipment has been determined to not be available).</li> <li>11. Provide notification to trucks and vehicles in loading or unloading queues that their engines shall be turned-off when not in use for more than 10 minutes.</li> </ol> <p><b>MM 3.3-4b: Onsite Idling Standards.</b> During generation tie-line installation these measures should be required to ensure the reduction of public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles:</p> <ol style="list-style-type: none"> <li>1. The driver shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location.</li> <li>2. The driver shall not operate a diesel-fueled auxiliary power system to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted area.</li> </ol> <p><b>MM 3.3-5b: Dust Control.</b> The project proponent shall continuously comply with the following measures to control fugitive dust emissions during generation tie-line installation activities:</p> <ol style="list-style-type: none"> <li>1. Increase handling moisture content of graded soils from the typical of 15 percent to 20 percent during construction activities.</li> <li>2. Reduce speed of road grading by motor graders and rollers from typical 7.1 miles per hour (mph) to 5 mph.</li> <li>3. Prior to construction, onsite roads that will have the greatest extent of onsite travel shall be graveled.</li> <li>4. Use a dust suppressant such as magnesium chloride, polymer, or similar, to the extent feasible, including on gravel roads.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM 3.3-6b: Onsite Emissions Control.</b> The project proponent shall continuously comply with the following measures during construction of generation tie-lines to control emissions from onsite dedicated equipment (equipment that would remain onsite each day):</p> <ol style="list-style-type: none"> <li>1. All onsite off-road equipment and on-road vehicles for maintenance shall meet the recent CARB engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied gas, or electric, as appropriate.</li> <li>2. All equipment shall be turned off when not in use, where feasible. Engine idling of all equipment shall be minimized.</li> <li>3. All equipment engines shall be maintained in good operating condition and in tune per manufacturer's specification.</li> </ol>	
<p><b>Impact 3.3-2:</b> The proposed projects could violate an applicable air quality standard or contribute substantially to an existing or projected air quality violation.</p>	<p>Significant and unavoidable</p>	<p>Mitigation Measures MM 3.3-1b through MM 3.3-6b</p>	<p>Significant and unavoidable</p>
<p><b>Impact 3.3-3:</b> Construction and operation of the proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable federal or state ambient air quality standards (including releasing emissions that exceed quantitative thresholds for ozone precursors).</p>	<p>Significant and unavoidable</p>	<p>Mitigation Measures MM 3.3-1b through MM 3.3-6b</p>	<p>Significant and unavoidable</p>
<p><b>Impact 3.3-4:</b> Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.</p>	<p>Potentially significant</p>	<p><b>MM 3.3-7b: Valley Fever.</b> 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"> <li>1. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.</li> <li>2. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever; symptoms of exposure; and instruction for</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent systems lasting more than 3 days shall be recommended to seek immediate medical advice.</p> <ol style="list-style-type: none"> <li>3. Training on methods that may help prevent Valley Fever infection.</li> <li>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 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.</li> </ol> <p><b>MM 3.3-8b: Valley Fever Public Awareness Program.</b> 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>	
<b>Cumulative</b>	Significant and unavoidable	Mitigation Measures MM 3.3-1b through MM 3.3-6b	Significant and unavoidable
<b>3.4 Air Space Management and Use</b>			
<b>Impact 3.4-1:</b> The project is located within the adopted Kern County Airport Land Use Compatibility Plan and could result in a safety hazard for people residing or working in the project area.	Less than significant	<p><b>MM 3.4-1b: Federal Aviation Administration Notification.</b> Prior to issuance of grading or building permits for generation tie-line installation:</p> <ol style="list-style-type: none"> <li>1. The developer shall 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 for the gen-tie towers;</li> <li>2. The developer shall also provide documentation to the Kern County Planning and Natural Resources Department demonstrating that the Federal Aviation Administration has issued a “Determination of No Hazard to Air Navigation” For the gen-tie towers. 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.</li> <li>3. The developer shall also provide documentation to the Kern County Planning and Natural Resources Department demonstrating that a copy of the approved form(s) has been provided to the operators of Mojave Air Space and Port.</li> </ol>	Less than significant
<b>Impact 3.4-2:</b> The project is located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.	Less than significant	No mitigation measures are required.	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<p><b>Impact 3.4-3:</b> The project could result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.</p>	<p>Less than significant</p>	<p>No mitigation measures are required.</p>	<p>Less than significant</p>
<p><b>Cumulative</b></p>	<p>Less than significant</p>	<p>Mitigation Measure MM 3.4-1b.</p>	<p>Less than significant</p>
<p><b>3.5 Biological Resources</b></p>			
<p><b>Impact 3.5-1:</b> The project would have a substantial adverse impact, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.</p>	<p>Potentially significant</p>	<p><b>MM 3.5-1b: Biological Monitoring.</b> Prior to the issuance of grading or building permits for generation tie-line construction, the project proponent shall retain a qualified biologist(s) who meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status species.</p> <ol style="list-style-type: none"> <li>1. The project qualified biologist(s) shall be onsite during ground disturbing activities throughout the generation tie-line construction phase. Ground disturbing activities include, but are not limited to: mowing, brush clearance, grubbing, excavation, trenching, grading, cut and roll vegetation clearing, drilling, equipment laydown or parking.</li> <li>2. The project qualified biologist(s) shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk.</li> <li>3. The project qualified biologist(s) shall have in her/his possession a copy of all the biological compliance measures while work is being conducted onsite.</li> <li>4. Prior to issuance of grading or building permits for the generation tie-line construction, contact information for the qualified biologist(s) shall be submitted to the appropriate Kern County Planning and Natural Resources Department.</li> </ol> <p>Any individuals who undertake biological monitoring and mitigation tasks shall be supervised by the qualified biologist(s) and shall have the appropriate education and experience to accomplish biological monitoring and mitigation tasks. Biological monitors shall comply with the above measures.</p> <p><b>MM 3.5-2b: Worker Environmental Awareness Training and Education Program.</b> Prior to the issuance of grading or building permits and for the duration of generation tie-line construction activities, within 1 week of employment all new construction workers at laydown area and/or generation tie-line transmission routes shall attend a Worker Environmental Awareness Training and Education Program (WEATEP), developed and presented by the Lead Biologist. The Training and Education shall include:</p> <ol style="list-style-type: none"> <li>1. Any employee responsible for the operations and maintenance or decommissioning of the project generation tie-line facilities shall also attend the Worker Environmental Awareness Training and Education Program.</li> <li>2. The program shall include information on the life history of the desert tortoise; burrowing owl; golden eagle, Swainson’s hawk, and other raptors; nesting birds; American badger; desert kit fox; as well as other wildlife and plant species that may be encountered during generation tie line installation activities. The program shall also discuss the legal protection status of each species, the definition of “take” under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent is implementing to protect the species, reporting requirements, specific measures that each worker shall</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>employ to avoid take of wildlife species, and penalties for violation of the Federal Endangered Species Act or California Endangered Species Act.</p> <ol style="list-style-type: none"> <li>3. An acknowledgement form signed by each worker indicating that Worker Environmental Awareness Training and Education Program has been completed would be kept on record.</li> <li>4. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the generation tie-line construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.</li> <li>5. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>6. A copy of the training transcript, training video or informational binder (including such information as trenching protection for kit fox requirements) for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.</li> <li>7. The generation tie-line construction crews and contractor(s) shall be responsible for unauthorized impacts from generation tie-line construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits. (See MM 3.5-4 (2))</li> </ol> <p><b>MM 3.5-3b: Noise, Dust and Lighting Mitigation.</b> The following measure will be implemented to avoid, minimize and mitigate potential impacts to special-status wildlife from noise:</p> <ol style="list-style-type: none"> <li>1. Construction equipment will be restricted from use in areas where biological buffers have been established to protect nests or other potentially noise sensitive resources. Buffers will be removed when nests have fledged or failed, or resource concerns no longer exist.</li> <li>2. Implement dust mitigation per Mitigation Measures MM 3.3-1 through MM 3.3-8 above.</li> <li>3. Night lighting will be kept to the minimum required to conduct project activities and ensure human safety and site security.</li> </ol> <p><b>MM 3.5-4b: General Avoidance.</b> During construction and decommissioning of generation tie-lines, the project proponent or contractor shall implement the following general avoidance and protective measures:</p> <ol style="list-style-type: none"> <li>1. Prior to conducting vegetation clearing or grading activities associated with construction or decommissioning of generation tie-lines, a qualified biologist or biological monitor that has been approved by the qualified biologist shall survey the area immediately prior to conducting these activities to ensure that no special-status animals are present. A qualified biologist or biological monitor shall monitor all initial generation tie-line installations and decommissioning ground-disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>2. Based on the results of generation tie-line pre-construction surveys, if any evidence of occupation of the site by listed or other special-status species is observed, a no- disturbance buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below. If sufficient avoidance cannot be established, construction shall cease in the vicinity of the Animal. For state and/or federally listed species, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate depending on the species, shall be contacted for further guidance and consultation on additional measures required.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>a. All proposed impact areas, including generation-tie line, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid natural resources where possible. Generation tie-line construction-related activities outside of the impact zone shall be avoided.</li> <li>b. Access roads that are planned for use during generation tie-line installation shall not extend beyond the planned impact area. All vehicle traffic shall be contained within the planned impact area or in previously disturbed areas. Where new access routes are required, the route will be clearly marked (i.e., flagged and/or staked) prior to generation tie-line construction.</li> <li>c. If exclusion fencing is required by any consulting Resource Agency (i.e., California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service), the site shall be fenced with a temporary exclusion fence to keep special-status terrestrial wildlife species, including desert tortoise, from entering during construction. This exclusion fencing shall be constructed of silt fence material, metal flashing, plastic sheeting, or other materials that will prohibit wildlife from climbing the fence or burrowing below the fence. The fencing shall be buried approximately 12 inches below the surface and extend a minimum of 18 inches above grade. Fencing shall be installed prior to issuance of grading or building permits and shall be maintained during all phases of generation tie-line installation and decommissioning. The fencing shall be inspected by an authorized biologist approved by the Resource Agencies weekly and immediately after all major rainfall events through the duration of construction and decommissioning activities. Any needed repairs to the fence shall be performed on the day of their discovery. Exclusion fencing shall be removed once generation tie-line construction or decommissioning activities are complete. Outside temporarily fenced exclusion areas, the project proponent/operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas. When consultation with the Resource Agency is required, such Resource Agency may impose additional requirements.</li> </ul> <ul style="list-style-type: none"> <li>3. To prevent inadvertent entrapment of desert kit foxes, badgers, or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks that are no less than 12 inches wide and secured at the top and spaced at 100 foot intervals. Covered and non-covered holes or trenches shall be thoroughly inspected for trapped animals by a qualified biologist or their biological monitor at the beginning and end of each day, including non-work days. Immediately before such holes or trenches are filled, they shall again be thoroughly inspected by trained staff approved by the retained qualified biologist for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is trapped, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate for the species, and Kern County Planning and Natural Resources Department shall be contacted immediately.</li> <li>4. Burrowing owls, mammals, and nesting birds can use construction pipes, culverts, or similar structures for refuge or nesting. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at a generation tie-line installation site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved or disturbed in any way until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>5. No vehicle or equipment parked on the tie-line sites shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own, or relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies. No one shall be allowed to touch a listed species without authorization from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.</li> <li>6. Vehicular traffic to and from the tie-line sites shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited.</li> <li>7. A speed limit of 10 miles per hour shall be enforced within the limits of the generation tie-line installation project.</li> <li>8. Spoils shall be stockpiled in disturbed areas that lack native vegetation when possible. Best management practices (BMPs) shall be employed to prevent erosion in accordance with the proposed project's Stormwater Pollution Prevention Plan (SWPPP) or Erosion Control Plan. All detected erosion shall be remedied within 2 days of discovery or as described in the SWPPP or Erosion Control Plan. Spoils that have been stockpiled and inactive for greater than 10 days shall be inspected by a qualified biologist for signs of special-status wildlife before moving or disturbing the spoils.</li> <li>9. No refueling within or adjacent to drainages or native desert habitats (within 150 feet) shall be permitted. Contractor equipment shall be fueled on a paved area, checked for leaks prior to operation and repaired as necessary.</li> <li>10. The project proponent shall submit a Maintenance and Trash Abatement/Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program shall include, but not limited to the following:               <ol style="list-style-type: none"> <li>a. The project proponent/operator shall clear debris from the project area each day during construction and decommissioning of the generation tie-lines.</li> <li>b. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed each day during construction and decommissioning of the generation tie-lines to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.</li> <li>c. The project proponent/operator shall erect a sign with contact information for the project proponent/operator's maintenance staff at each generation tie-line site during construction and decommissioning of gen-tie poles, as required by the Kern County Planning and Natural Resources Department.</li> <li>d. Receptacles shall include provisions for a locking system to prevent pest/rodent access to food waste receptacles that shall be implemented.</li> </ol> </li> <li>11. Workers shall be prohibited from bringing pets and firearms to the project area and from feeding wildlife. Collection of any plant or intentional killing of wildlife species shall be prohibited.</li> </ol> <p><b>MM 3.5-5b: Raven Management Plan.</b> A Raven Management Plan shall be prepared and the project will contribute to the U.S. Fish and Wildlife Service Regional Raven Management Program. The Plan will include at a minimum:</p> <ol style="list-style-type: none"> <li>1. Identification of all common raven nests along the generation tie-line routes during installation/construction.</li> <li>2. Weekly inspections during construction under all nests along the generation tie-line route for evidence of raven predation (e.g., bones, carcasses, etc.) and if evidence of listed-species predation is noted, submit a</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>report to the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the Kern County Planning and Natural Resources Department within five calendar days; and</p> <p>3. Provisions for the management of trash and water that could attract common ravens during the construction and decommissioning phases of the generation tie-line installation.</p> <p>The project proponent/operator shall be required to participate in the regional comprehensive raven management plan, to address biological resources; the project proponent/operator shall be subject to compensation through the payment of a one-time fee not to exceed \$150 and no less than \$105 per disturbed acre of land during construction of gen-tie pole locations, as established by the Desert Managers Group. Payment shall be made prior to starting construction activities. Evidence of the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife determination and payment of any required fees shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p><b>MM 3.5-6b Avian Power Line Specifications:</b> For generation tie-line construction, the project proponent/operator shall:</p> <ol style="list-style-type: none"> <li>1. Construct all generation tie-lines to the 2006 Avian Power Line Interaction Committee Guidelines specifications to protect birds from electrocution and collision. Appropriate notes regarding these specifications shall be included on any grading permit, building permit or final map.</li> <li>2. After construction, submit written documentation to the Kern County Planning and Natural Resources Department, and the California State Lands Commission, verifying that all generation tie- lines are constructed to the 2006 Avian Power Line Interaction Committee Guidelines. The project proponent/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.</li> </ol> <p>Install power collection and generation tie-lines utilizing Avian Power Line Interaction Committee standards for collision reducing techniques as outlined in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee, 2006).</p> <p><b>MM 3.5-7b: Nesting Birds and Raptors.</b> To mitigate for potential impacts to special-status birds and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during generation tie line route construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.</p> <ol style="list-style-type: none"> <li>1. During the avian nesting season (February 1 – August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 7 days prior to clearing of specific areas of the generation tie-lines. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the biologist be allowed to handle the nest or its eggs. The survey shall cover all reasonably potential nesting locations on and within 500 feet of the tie line site—this including ground nesting where species, such as California horned lark and killdeer might nest, all shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. Access shall be granted on private offsite properties prior to conducting surveys on private land. If access is not obtainable, the biologist shall survey these areas from the nearest vantage point with use of spotting scopes or binoculars.</li> <li>2. If generation tie-line construction is scheduled to occur during the non-nesting season (September 1 through February 1), no preconstruction surveys or additional measures are required for non-listed avian species.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>3. If generation tie-line construction begins in the non-nesting season and proceeds continuously into the nesting season within any particular construction or decommissioning area, no surveys are required for non-listed avian species so long as all suitable nesting sites have been cleared from active construction/decommissioning areas.</li> <li>4. If active nests are found, a 100-foot no-disturbance buffer shall be created around passerine species' nests unless adjusted by the qualified biologist based on the needs and sensitivities of individual species, and a 300-foot no-disturbance buffer around non-listed raptor species' nests (or a suitable distance otherwise determined in consultation with California Department of Fish and Wildlife). These buffers shall remain in effect until a qualified wildlife biologist has determined that the birds have fledged or the proposed project component(s) have been redesigned to avoid the area. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material.</li> </ol>	
		<p><b>MM 3.5-8b: Pre-construction Desert Tortoise Surveys.</b> Within 14 days prior to the commencement of any ground-disturbing activities for generation tie-line construction the project proponent shall conduct preconstruction surveys for desert tortoise within each generation tie-line construction site. The surveys shall be conducted in accordance with the U.S. Fish and Wildlife Service protocol (2010). If no burrows or tortoises are discovered during preconstruction surveys, no further mitigation is necessary. A survey shall be submitted with supporting evidence included such as photographs of areas/locations that may be suitable for this habitat, etc.</p>	
		<p>If burrows or tortoises are identified during preconstruction surveys, project proponent shall be required to:</p> <ol style="list-style-type: none"> <li>1. Potential burrows will be buffered by 30 feet unless they can be shown to be unoccupied or the authorized biologist believes a smaller buffer is appropriate in order to protect underground burrows. Examples of situations where smaller buffers may be appropriate may include: burrows obviously head in different direction from the impact; taking into consideration the type of activity near the burrow (i.e., will it have potential to crush a burrow); is the burrow adjacent to an existing thoroughfare that receives vehicle use already and is the proposed activity similar in nature etc.</li> <li>2. All activities shall cease within 200 feet of tortoises and the tortoises shall be allowed to move off the site on their own. If desert tortoises occur in a work area and they will not leave of their own accord, then it will be necessary to coordinate with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Physical relocation of a desert tortoise may not occur unless approved by the wildlife agencies and this may require authorizations pursuant to Incidental Take Permits from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.</li> <li>3. Should the applicant obtain a permit for the incidental take of desert tortoise, the applicant shall develop a plan for desert tortoise translocation and monitoring prior to project construction. The plan shall provide the framework for implementing the following measures: <ol style="list-style-type: none"> <li>a. Clearance surveys shall occur on a daily basis where construction activities occur within or adjacent to suitable desert tortoise habitat.</li> <li>b. Any desert tortoises found during clearance surveys or pre-construction surveys, if avoiding the tortoise(s) is not feasible, shall be placed in suitable, undisturbed habitat within 500 meters (1,640 feet) of their original location. The qualified desert tortoise biologist shall determine the best location for release, based on the condition of the vegetation, soil, other habitat features, and the proximity to human activities. If desert tortoises are found in a construction area where fencing was deemed unnecessary, work will cease until the qualified desert tortoise biologist moves the tortoise(s) within 500 meters (1,640 feet) of their original location.</li> </ol> </li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>c. Relocation of any tortoises shall follow the Guidelines for Handling Desert Tortoises during Construction Projects (Desert Tortoise Council 1994, revised 1999).</li> <li>d. An Authorized Biologist shall remain on site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a monthly basis throughout construction in order to ensure project compliance with mitigation measures.</li> <li>e. An Authorized Biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the gen-tie-line site.</li> <li>f. If an incidental take permit is being obtained, compensatory mitigation for the loss of desert tortoise habitat shall be provided through purchase of credit from an existing mitigation bank, such as the Desert Tortoise Natural Area, private purchase of mitigation lands, or onsite preservation, as approved by the resource agencies. Compensatory mitigation shall be provided at a 1:1 ratio to reduce potential effects to less-than-significant levels.</li> <li>g. Develop a plan for desert tortoise translocation and monitoring prior to project construction. The plan shall provide the framework for implementing the following measures:</li> <li>h. If a permanent tortoise proof wild-friendly fence is practicable, a fence shall be installed around all gen-tie line construction areas prior to the initiation of earth disturbing activities, in coordination with the Lead Biologist or on-site qualified biological monitor. The fence shall be constructed of 0.5-inch mesh hardware cloth and extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence shall be supported sufficiently to maintain its integrity, be checked at least monthly during gen-tie line construction, and maintained when necessary by the project proponent to ensure its integrity. Provisions shall be made for closing off the fence at the point of vehicle entry. Common raven perching deterrents shall be installed as part of the fence construction.</li> <li>i. After fence installation, an Authorized Biologist shall conduct a preconstruction survey for desert tortoise within the construction site. An Authorized Biologist has the appropriate education and experience to accomplish biological monitoring and mitigation tasks and is approved by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. Two surveys without finding any desert tortoises or new desert tortoise sign shall occur prior to declaring the site clear of desert tortoises.</li> <li>j. All burrows that could provide shelter for a desert tortoise shall be hand-excavated prior to ground-disturbing activities.</li> <li>k. An Authorized Biologist shall remain on site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a monthly basis throughout construction in order to ensure project compliance with mitigation measures.</li> <li>l. An Authorized Biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the tie-line site.</li> <li>m. If an ITP is being obtained, compensatory mitigation for the loss of desert tortoise habitat shall be provided through purchase of credit from an existing mitigation bank, such as the Desert Tortoise Natural Area, private purchase of mitigation lands, or on-site preservation, as approved by the resource agencies. Compensatory mitigation shall be provided at a 1:1 ratio to reduce potential effects to less-than-significant levels.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>4. The Raven Management Plan developed for the construction of the generation tie-line sites, (as noted in section MM 3.5-5) shall include:</p> <ul style="list-style-type: none"> <li>a. Identification of all common raven nests within the site during construction.</li> <li>b. Weekly inspections during construction under all nests in the tie-line sites for evidence of desert tortoise predation (e.g., scute's, shells, etc.).</li> </ul> <p>If evidence of desert tortoise predation is noted, a report shall be submitted to the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the Kern County Planning and Natural Resources Department within five calendar days.</p> <p><b>MM 3.5-9b: Preconstruction Burrowing Owl Surveys.</b> A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience, as demonstrated in the submitted resume for approval with the Kern County Planning and Natural Resources Department) shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows within 14 days prior to ground-disturbing for generation tie-line construction activities (i.e., vegetation clearance, grading, tilling). The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation and including the following:</p> <ul style="list-style-type: none"> <li>1. Surveys shall be conducted by 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. Surveys may be conducted concurrently with desert tortoise preconstruction surveys. Photographic submissions to the Kern County Planning and Natural Resources Department as part of survey results are encouraged regardless of surveys results.</li> <li>2. As each burrow is investigated, surveying biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results (including photographs) shall be submitted to California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department as part of the monthly biological monitoring reporting requirements.</li> <li>3. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the breeding season (i.e., February 1 to August 31), unless otherwise authorized by California Department of Fish and Wildlife. During the non-breeding (winter) season (i.e., September 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with California Department of Fish and Wildlife.</li> <li>4. If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.</li> <li>5. If passive relocation is required, the qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and Mitigation Land Management Plan in accordance with 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation for review and approval by California Department of Fish and Wildlife prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation. Additional consultation between CDFW and the project owner may be required with CDFW. All final approvals, (including potential conservation easements) and consultation materials shall be submitted to the Kern County Planning and Natural Resources Department.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><b>MM 3.5-10b: Special-Status Mammals Management Plan.</b> A Special-Status Mammals Management Plan will be written to avoid and minimize impacts to the Mohave ground squirrel, desert kit fox, and American badger if these resources are determined to be present on the proposed generation construction tie-line sites. If no Mohave ground squirrels are found during focused surveys, this plan will not be required and the following measures will be used to minimize impacts to American badger:</p> <ol style="list-style-type: none"> <li>1. All dens and burrows large enough to be used by desert kit fox or American badger and in areas of potential direct impacts from generation tie-line construction (from crushing of the burrows and dens) will be carefully excavated to passively relocate these species from the immediate area. These dens will be observed by remote camera for a minimum of 3 days prior to excavation. If any sign of breeding, kit fox, or American badger is present during this time, three additional days of observation will be conducted to determine whether the burrow supports and active nest or natal den. No burrows supporting a nest or natal dens will be excavated until ongoing cameras monitoring shows no behaviors related to nesting or a natal den are observed, or until outside the period of nesting and natal den activity (approximately December through February).</li> <li>2. Speed limits on generation tie-line components will be a maximum of 20 miles per hour during the day and 10 miles per hour during the night to avoid vehicle collisions.</li> <li>3. If any desert kit fox or American badgers are found dead, ill, or injured on the project components, California Department of Fish and Wildlife will be notified with 24 hours to determine an appropriate course of action. Mortalities will be immediately stored in a project freezer until California Department of Fish and Wildlife determines any potential needs for necropsy.</li> </ol>	
		<p><b>MM 3.5-11b: Trench Monitoring Requirements.</b> During construction and decommissioning of the generation tie-line routes, all trenches or holes more than 6 inches deep shall be provided with one or more escape ramps constructed of earthen fill or wooden planks (with a minimum 1 foot in width) for the protection of wildlife species and must be inspected by the Lead Biologist, qualified biological monitor, designated compliance manager, project operator, or contractor prior to being filled.</p> <ol style="list-style-type: none"> <li>1. Any such features that are left open overnight will be searched each day and prior to construction activities to ensure no animals are trapped. Work will not continue until trapped animals have moved out of open trenches.</li> <li>2. All open holes, sumps, and trenches within the Project footprint shall be inspected at the beginning, middle, and end of each day for wildlife.</li> <li>3. All trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope and that are between 2 and 8 feet deep shall be covered, when workers or equipment are not actively working in the excavation, which includes cessation of work overnight, or shall have an escape ramp of earth or a non-slip material (with a minimum 1 foot in width) with a less than 1:1 (45 degree) slope. All trenches, holes, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope and greater than 8 feet deep shall be covered or have an escape ramp of earth or a non-slip material (with a minimum 1-foot in width) with a less than 1:1 (45 degree) slope, when workers or equipment are not actively working in the excavation and at the end of each work day. Where an escape ramp is required, it shall be placed every 300 feet. To prevent inadvertent entrapment of wildlife, when covers are required according to the conditions outlined above, a qualified biological monitor or designated compliance manager shall oversee the covering of all excavated, trenches, holes, sumps, or other excavations with a greater than 1:1 (45 degree) slope of any depth with barrier material (such as hardware cloth) at the close of each working day such that wildlife are unable to dig or squeeze under the barrier and become entrapped, or excavations shall have an escape ramp of earth or a non-slip material (with a minimum 1 foot in width) with a less than 1:1 (45 degree) slope.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>4. The outer 2 feet of excavation cover, shall conform to solid ground so that gaps do not occur between the cover and the ground and secured with soil staples or similar means to prevent gaps. Each morning, mid-day, the end of each day (including weekends and any other non-work days), and immediately before trenches, holes, sumps, or other excavations are back-filled, a qualified biological monitor or designated compliance manager shall thoroughly inspect for wildlife. If wildlife is observed, all activities in the vicinity shall cease and the onsite qualified biological monitor or Lead Biologist shall be consulted.</li> <li>5. Trenches, holes, sumps, or other excavations that are covered long term shall be inspected at the beginning of each working day to ensure inadvertent entrapment has not occurred.</li> <li>6. If any worker discovers that wildlife has become trapped, all activities in the vicinity shall cease and Lead biologist or the onsite qualified biological monitor shall be notified immediately. Project workers guided by the Lead Biologist or qualified biological monitor shall allow the trapped wildlife to escape unimpeded before activities are allowed to continue. If the entrapped animal is a federal- or state-listed species and an ITP has been acquired by the project proponent for that species, only a Designated Biologist and/or Authorized Biologist as defined in the terms of the ITP(s) may capture and relocated the animal in accordance with the project ITP provisions. If the entrapped animal is a Federal- or State-listed species and an ITP has not been acquired by the project proponent for that species, the project proponent should contact the appropriate wildlife agency immediately.</li> <li>7. A log shall be kept and provided to the Kern County Planning and Natural Resources Department monthly during construction and decommissioning indicating compliance.</li> </ol>	
		<p><b>MM 3.5-12b Vegetation Salvage Mitigation and Monitoring Plan (VSMMP).</b> If required by CDFW or LRWQCB, a Vegetation Salvage Mitigation and Monitoring Plan (VSMMP) shall be prepared that outlines the compensatory mitigation in coordination with the LRWQCB and CDFW.</p> <ol style="list-style-type: none"> <li>1. If on-site mitigation is proposed, the VSMMP shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration of alluvial desert scrub. Determination of mitigation adequacy shall be based on comparison of the restored vegetation habitat with similar, undisturbed habitat in the site vicinity (such as upstream or downstream of the site).</li> <li>2. The VSMMP shall include remedial measures in the event that performance criteria are not met.</li> <li>3. If mitigation is implemented offsite, mitigation lands shall be comprised of similar or higher quality alluvial desert scrub and preferably located in the vicinity of the site or watershed. Off-site land shall be preserved through a deed restriction or conservation easement and the VSMMP shall identify an approach for funding assurance for the long-term management of the conserved land.</li> <li>4. Copies of any coordination, permits, etc., with LRWQCB and CDFW shall be provided to the Kern County Planning and Natural Resources Department.</li> </ol>	
<p><b>Impact 3.5-2:</b> The project would have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish</p>	<p>Potentially significant</p>	<p><b>Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM 3.5-14b: Joshua Tree Impact Plan.</b> Prior to issuance of grading or building permits for the generation tie-line installation the applicant shall develop a Joshua Tree Impact Plan. The Plan shall be prepared by a qualified biologist preapproved by the Kern County Planning and Natural Resources Department and who is familiar with Western Mojave Desert species and ecosystems. At a minimum, the plan shall include the following:</p> <ol style="list-style-type: none"> <li>1. Demonstration of full avoidance of Joshua trees as part of construction Indication of the number of trees and total area of Joshua tree woodland that would be impacted including a discussion of Joshua tree population</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
and Wildlife or the U.S. Fish and Wildlife Service.		<p>age and health and the number of Joshua trees that could be relocated within the buffer area of the generation tie-lines (and suitable areas elsewhere).</p> <ol style="list-style-type: none"> <li>2. Methods shall be specified for avoiding specific Joshua tree(s) and suitable candidates for translocation identified.</li> <li>3. Avoidance measures during generation tie-line construction activities, such as delineating work areas and specific Joshua trees that shall be avoided. If necessary, Joshua trees should be flagged for protection or translocated to the onsite buffer area within sparsely vegetated and/or disturbed areas that are suitable for planting native desert species.</li> <li>4. Monitoring requirements for any translocated Joshua trees that will be relocated. Post-monitoring of all translocated Joshua trees, if any, shall be required a minimum of 3 years following relocation to verify that the trees have adapted and are in good health. The Plan shall identify contingency measures if a tree or group of trees die, such as replanting and continued monitoring, or an in lieu fee payment.</li> <li>5. Detail relocation methods. The root ball shall be preserved during relocation of Joshua trees. Preferably, a tree spade should be used to relocate Joshua trees in order to preserve the entirety of the tree's root ball. Success of relocated trees shall be a minimum of 90 percent after 3 years. The Plan shall identify the appropriate time of year for transplanting Joshua trees, and shall consider the plant's original and transplanted physical orientation, prevailing wind direction, soil type of the original and transplanted locations, and other related attributes which may affect the successful transplantation of the Joshua tree(s). In-lieu fee monetary funding may be applied for any tree not meeting the 90 percent success rate.</li> <li>6. Detail of a 3-year maintenance program for any planned relocated Joshua trees on the site, such as weed maintenance, supplemental irrigation, and support stakes.</li> <li>7. The plan shall specify that a qualified biologist or biological monitor shall monitor construction and all Joshua trees removed or damaged. A monitoring report shall be submitted to the Kern County Planning and Natural Resources Department to document the condition of the Joshua trees annually for 3 years if any Joshua trees are relocated.</li> <li>8. Identification of the total area of Joshua tree woodland and an estimate of the number of individual Joshua trees that will be removed and/or relocated for determining of the total funds needed to comply.</li> </ol>	
<p><b>MM 3.5-15b: In-lieu of Fee for Loss of Joshua Tree Woodland.</b> The project proponent(s) may mitigate all or part of the project's impacts to Joshua tree woodlands by funding the acquisition and management in perpetuity of Joshua tree woodland, or habitats similar to those that contain impacted Joshua trees onsite that are located within the same bioregion and/or watershed, as approved by the Kern County Planning and Natural Resources Department. Funding and management shall be provided through a Kern County approved Conservation Plan, either through an existing mitigation bank (e.g., as managed by the City of Lancaster Parks, Recreation and Arts Department) or through a third-party entity such as the Wildlife Conservation Board or a regional Land Trust. The in-lieu fee shall provide sufficient funds to acquire appropriate lands to provide habitats containing Joshua trees at a 1:1 ratio for impacted lands, comparable to the habitat to be impacted by the project based on similar abundance and size of Joshua trees, similar co-dominant vegetation, suitable soils and hydrology, and similar levels of disturbance or habitat degradation (or lack thereof). The County-approved biologist shall submit confirmation of the total area of Joshua tree woodland and an estimate of the number of individual Joshua trees that will be removed.</p>			

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<p><b>Impact 3.5-3:</b> The project would have a substantial adverse impact on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</p>	Potentially significant	<p>Mitigation Measures MM 3.5-1b, MM 3.5-2b, and <b>MM 3.5-13b: Jurisdictional Waters Permitting.</b> Prior to construction, a formal jurisdictional delineation would be prepared for the project that describes these resources and the extent of jurisdiction under the CDFW and RWQCB. A review of streambeds along the proposed gen-tie routes has been prepared (Dudek 2018). If it is determined during final siting that ephemeral drainages cannot be avoided, the project applicant shall be subject to provision (a) as identified below:</p> <ol style="list-style-type: none"> <li>1. If avoidance is not practical, prior to ground disturbance activities that could impact these aquatic features, the project applicant shall file a complete Report of Waste Discharge with the Lahontan RWQCB to obtain Waste Discharge Requirements and shall also consult with California Department of Fish and Wildlife on the need for a streambed alteration agreement. Correspondence and copies of reports shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>2. Based on consultation with the Lahontan RWQCB and CDFW, if permits are required for the project, appropriate permits shall be obtained prior to disturbance of jurisdictional resources.</li> <li>3. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified and secured prior to disturbance of the features at a minimum 1:1 ratio, as approved by the RWQCB or CDFW either through onsite or offsite mitigation, or purchasing credits from an approved mitigation bank.</li> <li>4. The project proponent shall comply with the compensatory mitigation required and proof of compliance, along with copies of permits obtained from RWQCB and/or CDFW, shall be provided to the Kern County Planning and Natural Resources Department.</li> </ol>	Less than significant
<p><b>Impact 3.5-4:</b> The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.</p>	Less than significant	No mitigation measures are required.	Less than significant
<p><b>Impact 3.5-5:</b> The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</p>	Potentially significant	Mitigation Measures MM 3.5-14b and MM 3.5-15b	Less than significant
<p><b>Impact 3.5-6:</b> The project would conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.</p>	Less than significant	None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.5-1b through 3.5-15b	Less than significant
<b>3.6 Cultural and Paleontological Resources</b>			
<b>Impact 3.6-1:</b> The project would cause a substantial adverse change in the significance of a historical or unique archaeological resource.	Potentially significant	<p><b>MM 3.6-1b: Cultural Resources Personnel Professional Qualifications Standard.</b> The services of a qualified lead archaeologist meeting the secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011) shall be retained by the project proponent to carry out all mitigation measures related to archaeological, cultural and historical resources. A qualified archeological and Native American monitor may also be retained in order to work with and consult with the lead archaeologist.</p> <ol style="list-style-type: none"> <li>All ground-disturbing activities within 50-feet of resources (site SS-S-23; SS-S-10; and SS-S-30) per Cultural Resources Assessment of the Gen-Tie Routes by Dudek (Appendix B7) shall be avoided. If these resources cannot be avoided, all ground-disturbing activities within the generation tie-line area shall be monitored by a Native American monitor representing at least one of the Consulting Tribes (Appendix A5), along with the lead or archeological monitor. An Archaeological Monitoring Plan shall be prepared prior to any ground disturbing activity. Ground disturbing activities include, but are not limited to: mowing, brush clearance, grubbing, excavation, trenching, grading, cut and roll vegetation clearing, drilling, equipment laydown or parking.</li> <li>Should any discovery be found during ground work or ground disturbing activities, the qualified Native American monitor and/or qualified archaeological monitor would halt all work within 60-feet of the find and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. The lead archaeologist shall notify the applicant the Tribes and County of the discovery. All parties shall confer regarding the treatment of the discovered resource(s) and the lead archaeologist shall then prepare an Archaeological Treatment Plan for the discoveries. If consensus cannot be reached between all parties, the County shall make the final decision.</li> <li>The archaeological monitor and qualified Native American monitor shall work under the supervision of the qualified archaeologist. The lead archaeologist, archaeological monitor, and qualified Native American monitor shall be provided all project documentation related to cultural resources within the project area 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. The lead archaeologist, archaeological monitor, and Native American monitor shall keep daily logs and the qualified archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the qualified archaeologist shall prepare a monitoring report detailing the results of monitoring. All discoveries are subject to proper recordation on California Department of Parks and Recreation (DPR) forms. All final documentation shall be submitted to the Kern County Planning and Natural Resources Department, to the consulting Tribes (Appendix A5) and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.</li> </ol> <p><b>MM 3.6-2b: Worker Cultural Awareness Training Program.</b> Prior to the commencement of ground-disturbing activities, and for the duration of generation tie-line installation and decommissioning activities, a Worker Cultural Awareness Training Program shall be provided to all construction personnel prior to their commencing work at the generation tie-line sites.</p>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>1. The training shall be prepared and conducted by a qualified archaeologist in consultation with the qualified Native American Monitor. The training may be discontinued when ground disturbance is completed or suspended, but must resume when ground-disturbing activities resume.</li> <li>2. A sticker shall be placed on hard hats indicating that the worker has completed the environmental/cultural/paleontological training. Construction personnel 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.</li> <li>3. 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.</li> </ol>	
		<p>The purpose of the Cultural Awareness Training Program shall be to inform and train construction personnel of the types of cultural resources that may be encountered during construction of the gen-tie lines, and to bring awareness to personnel of actions to be taken in the event of a cultural resources discovery. This may include: a discussion of applicable cultural resources statutes, regulations and related enforcement provisions; an overview of the prehistoric and historic environmental setting and context, as well as current cultural information regarding local tribal groups; samples or visuals of artifacts that might be found in the project area; a discussion of what prehistoric and historic archaeological deposits look like at the surface and when exposed during construction; and procedures to be followed in the event of an inadvertent discovery (see Mitigation Measure MM 3.6-4b).</p>	
		<p><b>MM 3.6-3b: Archaeological and Native American Resources Monitoring.</b> Archaeological and Native American monitoring are both subject to consultation with the Native American Tribal Resource Agencies under Section 106. As such, the requirements of various stakeholders must be considered and accommodation made wherever feasible. Therefore, specific archaeological and Native American monitoring details cannot be included herein. However, at a minimum it is expected that the developer shall retain a qualified archaeological monitor for project-related ground disturbing activities for the purpose of identifying and avoiding adverse effects to significant archaeological resources.</p>	
		<p>Ground disturbing activities include, but are not limited to, brush clearance, grubbing, excavation, trenching, grading, and drilling. Areas requiring monitoring for the generation tie-line installation and the level of monitoring shall be developed by the Tribal Stakeholders and Kern County Planning and Natural Resources Department, in coordination with the qualified archaeologist, and shall be detailed in the Cultural Resources Management Plan for the gen-tie line route. Any archaeological monitors shall be, or work under the direct supervision of, a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's standards for professional archaeology and shall be approved by Kern County Planning and Natural Resources Department. The monitors shall be familiar with the types of historical and prehistoric resources that could be encountered within the project area.</p>	
		<p>The archaeological monitor shall ensure that personnel performing ground-disturbing activities are displaying the appropriate decal on their hardhat demonstrating their CR Awareness training under Mitigation Measure MM 3.6-3b. The archaeological monitors shall record soil samples and artifact/ecofact material as warranted for analysis. The archaeological monitors shall be present on the generation tie-line site according to a schedule as detailed in the Cultural Resources Management Plan for the gen-tie line route. The monitors shall maintain a daily log of activities, which will be appended to a final monitoring report that shall be submitted to the Kern County Planning and Natural Resources Department, and Southern San Joaquin Valley Archaeological Information Center.</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Specific monitoring reporting procedures shall be detailed in the Cultural Resources Management Plan for the gen-tie line routes.</p> <p>Section 106 consultation with Native American tribes may result in a need for one or more Native American monitors. The specific nature of the monitoring activity performed by Native American tribes can vary and therefore the requirements for Native American monitors will be elicited as part of consultation.</p> <p><b>MM 3.6-4b: Inadvertent Discoveries.</b> During generation tie-line construction and decommissioning, should subsurface cultural or paleontological resources be discovered, all activity within 60 feet of the find shall stop and a qualified paleontologist shall be contacted to assess the significance of the find. The area of the discovery shall be marked off as an Environmentally Sensitive Area (ESA) and a physical demarcation/barrier constructed. All entrance to the area shall be avoided until the discovery is assessed by the qualified archaeologist and/or Native American representative, if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. If the qualified archaeologist, in consultation with the Native American representative(s) determines the resource is significant (i.e., qualifies as a historic property, historical resource, or unique archaeological resource), then the archaeologist shall determine appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(c), if it is demonstrated that resources cannot be feasibly avoided, the qualified archaeologist, in consultation with a Designated Native American monitor, shall develop additional treatment measures which may include data recovery or other appropriate measures or shall implement the provisions for mitigative treatments detailed in the Paleontological Resources Management Plan for the gen-tie line route (as required by MM 3.6-5b). Work shall not resume within 60 feet of the discovery until permission is received from the Paleontologist and/or Native American representative(s), and if in disagreement, the Kern County Planning and Natural Resources Department shall be consulted.</p>	
<p><b>Impact 3.6-2:</b> The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	<p>Potentially significant</p>	<p><b>MM 3.6-5b: Paleontological Resources Mitigation and Monitoring Plan.</b> The developer shall retain a qualified paleontologist to prepare a Paleontological Resources Mitigation and Monitoring Plan for implementation during construction of the generation tie lines. The minimum requirement for professional paleontological work is a 4-year undergraduate program and Master of Science degree, although a doctoral degree may be required for certain specialties; a qualified paleontologist is one that has experience in research, field, and laboratory methods for paleontological resources, including experience in fossil salvage, stratigraphy, fossil preparation, and identification, with experience in California. The Paleontological Resources Mitigation and Monitoring Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval prior to the start of grading or construction and shall include the following:</p> <ol style="list-style-type: none"> <li>1. Procedures for the discovery, recovery, and salvage of paleontological resources encountered during construction, if any, in accordance with standards for recovery established by the Society of Vertebrate Paleontology.</li> <li>2. Verification that the developer has an agreement with a recognized museum repository (such as the Natural History Museum of Los Angeles County), for the disposition of recovered fossils and that the fossils shall be prepared prior to submittal to the repository as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or cataloged).</li> <li>3. Description of monitoring reports that will be prepared, which shall include daily logs and a final monitoring report with an itemized list of specimens found to be submitted to the Kern County Planning and Natural Resources Department and the Southern San Joaquin Valley Information Center at California State University, Bakersfield within 90 days of the completion of monitoring. Consultation of any find in the right-</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>of-way shall be conducted the Southern San Joaquin Valley Information Center at California State University, Bakersfield.</p> <p>4. The project applicant shall provide for the permanent curation of recovered materials from lands under the County of Kern jurisdiction at a federally approved curation facility, such as the Tejon Tribal Curation Facility.</p> <p><b>MM 3.6-6b: Worker Paleontological Resources Awareness Training Program.</b> Prior to the commencement of ground-disturbing activities, and for the duration of construction activities, a Worker Paleontological Awareness Training Program shall be provided to all construction personnel prior to their commencing work on installation of generation tie-line sites.</p> <ol style="list-style-type: none"> <li>The training may be performed in concert with the archaeological/cultural resources training prior to the onset of the generation tie-line installation. The training shall be prepared and conducted by a qualified paleontologist. The training may be in the form of a video.</li> <li>The training may be discontinued when ground disturbance is completed or suspended, but must resume when ground-disturbing activities resume.</li> <li>A sticker shall be placed on hard hats indicating that the worker has completed the environmental/cultural/paleontological training.</li> <li>Construction personnel 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.</li> <li>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.</li> <li>The purpose of the Paleontological Awareness Training Program shall be to inform and train construction personnel of the types of paleontological resources that may be encountered during construction, and to bring awareness to personnel of actions to be taken in the event of a paleontological resources discovery. This may include: a discussion of applicable paleontological resources statues, regulations and related enforcement provisions; samples or visuals of fossils that might be found in the project area; implementation of the Paleontological Resources Mitigation and Monitoring Plan; and procedures to be followed in the event of an inadvertent discovery.</li> <li>Consultation on any find in the right-of-way shall be conducted with the Natural History Museum of Los Angeles County.</li> </ol> <p><b>MM 3.6-7b: Paleontological Resources Monitoring.</b> The developer shall provide for a qualified paleontologist or an individual working under direct supervision of a qualified paleontologist to monitor construction activities in areas where deeper excavations may be needed (greater than 10 feet). The duration and timing of the monitoring, which shall be set in the Paleontological Resources Mitigation and Monitoring Plan, shall be determined by the qualified paleontologist, in consultation with the Tribal Stakeholders and Kern County Planning and Natural Resources Department and based on the grading plans. Initially, all excavation or grading activities deeper than 10 feet shall be monitored. However, during the course of monitoring, if the paleontologist can demonstrate that the level of monitoring should be reduced, the paleontologist, in consultation with the Tribal Stakeholders and Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances warranted. If a resource is encountered, the monitor will implement the procedures of the Paleontological Resources Mitigation and Monitoring Plan. If recovery of a large or unusually productive fossil occurrence is necessary, the following actions shall be taken:</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>1. The paleontological monitor shall immediately notify the project developer, who shall contact the Tribal Stakeholders and Kern County Planning and Natural Resources Department.</li> <li>2. Construction activities in the immediate vicinity of the site shall stop until authorization for work to continue is provided by the Tribal Stakeholders and Kern County Planning and Natural Resources Department.</li> <li>3. Treatment and subsequent donation of fossils to a repository, along with the preparation of a report documenting the absence or discovery of fossil-related resources will be performed in accordance with the Paleontological Resources Mitigation and Monitoring Plan.</li> </ol>	
<b>Impact 3.6-3:</b> The project would disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	<b>MM 3.6-8b: Discovery of Human Remains.</b> In the event of inadvertent discovery of human remains during construction and decommissioning of generation tie-lines, all work shall be halted and the Kern County Coroner shall be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the California Environmental Quality Act Guidelines. At that time, the project proponent shall contact the Kern County Planning and Natural Resources Department regarding the find. If the County Coroner determines the remains are Native American in origin, 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 Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent (MLD) for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.6-1b through MM 3.6-8b	Less than significant
<b>3.7 Geology, Minerals, and Soils</b>			
<b>Impact 3.7-1:</b> The project would expose people or structures to 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	<p><b>MM 3.7-1b: Conduct Geotechnical Study.</b> Prior to the issuance of building or grading permits for the generation tie-line installation, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the sites and submit it to the Kern County Public Works Department and Department for review and approval.</p> <ol style="list-style-type: none"> <li>1. The geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not limited to, the following:               <ol style="list-style-type: none"> <li>a. Location of fault traces and potential for surface rupture and groundshaking potential;</li> <li>b. Maximum considered earthquake and associated ground acceleration;</li> <li>c. Potential for seismically induced liquefaction, landslides, differential settlement, and mudflows;</li> <li>d. Stability of any existing or proposed cut-and-fill slopes;</li> <li>e. Collapsible or expansive soils;</li> <li>f. Foundation material type;</li> <li>g. Potential for wind erosion, water erosion, sedimentation, and flooding;</li> </ol> </li> </ol>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> <li>h. Location and description of unprotected drainage that could be impacted by the proposed development; and,</li> <li>i. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.</li> <li>2. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to 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 sighting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.</li> <li>3. The Kern County Public Works Department shall evaluate any final generation tie line siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided.</li> </ul>	
		<p><b>MM 3.7-2b: Comply Seismic Safety Requirements.</b> Prior to the issuance of grading permits, the project proponent shall retain a California registered and licensed engineer to design the project generation tie lines to withstand probable seismically induced ground shaking at the site. All grading and construction onsite shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered professional engineer. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural design shall be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements shall be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.</p>	
<p><b>Impact 3.7-2:</b> The project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.</p>	<p>Less than significant</p>	<p>Mitigation Measure MM 3.7-2b</p>	<p>Less than significant</p>
<p><b>Impact 3.7-3:</b> The project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction.</p>	<p>Less than significant</p>	<p>Mitigation Measure MM 3.7-1b</p>	<p>Less than significant</p>
<p><b>Impact 3.7-4:</b> The project would result in substantial soil erosion or the loss of topsoil.</p>	<p>Less than significant</p>	<p>None required</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.7-5:</b> The project is located on a geologic unit or soil that is unstable, or that would become unstable as result of the project, and potentially result in onsite or onsite landslide, lateral spreading, subsidence, liquefaction, or collapse.	Less than significant	None required	Less than significant
<b>Impact 3.7-6:</b> The project is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Less than significant	Mitigation Measures MM 3.7-1b, MM 3.7-2b, and <b>MM 3.7-3b: Generation-Tie Line Grading.</b> The project proponent shall limit grading to the minimum area necessary for construction of the generation tie lines. Prior to the initiation of construction, the project proponent shall retain a California registered and licensed professional engineer to submit final grading earthwork plans prior to generation tie line construction to the Kern County Public Works for approval.  <b>MM 3.7-4b: Soil Erosion and Sedimentation Control Plan.</b> The project proponent shall prepare a Soil Erosion and Sedimentation Control Plan to mitigate potential loss of soil and erosion. The plan shall be prepared by a California registered and licensed civil engineer or other authorized professional and submitted for review and approval by the Kern County Engineering, Surveying and Permit Services Department.	Less than significant
<b>Impact 3.7-7:</b> The project has soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.	Less than significant	None required	Less than significant
<b>Impact 3.7-8:</b> The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	Less than significant	None required	Less than significant
<b>Impact 3.7-9:</b> The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Less than significant	None required	Less than significant
<b>Cumulative</b>	Less than significant	None required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>3.8 Greenhouse Gas Emissions</b>			
<b>Impact 3.8-1:</b> The project would generate greenhouse gas emissions, either directly or indirectly, that may have an impact on the environment.	Less than significant	Mitigation Measures MM 3.3-1b through MM 3.3-8b	Less than significant
<b>Impact 3.8-2:</b> The project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less than significant	Mitigation Measures MM 3.3-1b through MM 3.3-8b	Less than significant
<b>Cumulative</b>	Less than significant	Mitigation Measures MM 3.3-1b through MM 3.3-8b	Less than significant
<b>3.9 Hazardous Materials and Safety</b>			
<b>Impact 3.9-1:</b> The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	<p><b>MM 3.9-1b: Hazardous Materials Business Plan.</b> Prior to the issuance of grading or building permits, and throughout the life of the project, including decommissioning, the project proponent shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all required information to the California Environmental Reporting System (CERS) at <a href="http://cers.calepa.ca.gov/">http://cers.calepa.ca.gov/</a> for review and approval.</p> <ol style="list-style-type: none"> <li>1. The HMBP shall: <ol style="list-style-type: none"> <li>a. Delineate hazardous material and hazardous waste storage areas;</li> <li>b. Describe proper handling, storage, transport, and disposal techniques;</li> <li>c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill;</li> <li>d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction;</li> <li>e. Establish public and agency notification procedures for spills and other emergencies including fires; and</li> <li>f. Include procedures to avoid or minimize dust from existing residual pesticide and herbicide use that may be present on the site.</li> </ol> </li> <li>2. The project proponent shall provide that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the generation tie-line sites at all times.</li> <li>3. In addition, a copy of the approved HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the project's permanent record.</li> </ol> <p><b>MM 3.9-2b: Recycle Construction Waste.</b> During construction and decommissioning of generation tie-lines, debris and waste generated shall be recycled to the extent feasible. The project proponent/operator shall designate a Recycling Coordinator to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The Recycling Coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according</p>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department.</p> <p><b>MM 3.9-3b: Spill Prevention, Control, and Countermeasure Plan.</b> Prior to the issuance of grading or building permits for the generation tie-line installation, the developer shall prepare and submit a Spill Prevention, Control, and Countermeasure Plan to the California Environmental Protection Agency, and the Kern County Planning and Natural Resources Department for review. The plan will be for the storage and use of transformer oil, gasoline, or diesel fuel at the generation tie-line sites. The purpose of the plan will be to mitigate the potential effects of a spill of transformer oil, gasoline, or diesel fuel. The plan shall include design features of the generation tie-line installation project that may contain accidental releases of petroleum and transformer oil products from onsite fuel tanks and transformers.</p> <p><b>MM 3.9-4b: Herbicide Control.</b> The project proponent shall continuously comply with the following:</p> <ol style="list-style-type: none"> <li>1. The construction contractor or project personnel shall use herbicides that are approved for use by the Environmental Protection Agency, are appropriate for use in California and for application adjacent to natural vegetation areas (i.e., non-agricultural use). Workers who apply herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.</li> <li>2. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.</li> <li>3. 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.</li> <li>4. 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.</li> <li>5. 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.</li> <li>6. A written record of all herbicide applications on site, including dates and amounts, shall be furnished to the California State Lands Commission on a monthly basis.</li> </ol> <p><b>MM 3.9-7b: Environmental Contamination Avoidance.</b> If the generation tie line crosses contaminated soils or remedial equipment on the properties that have been land-use restricted by the California Department of Toxic Substances Control, a health and safety plan must be prepared to ensure that any construction workers, nearby residents or other sensitive receptors are protected from any contaminants that may become airborne during soil disturbance. Additionally, the caps installed to contain the contaminated soil cannot be punctured.</p>	
<p><b>Impact 3.9-2:</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.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measures MM 3.9-1b through MM 3.9-4b, MM 3.9-7b, and:</p> <p><b>MM 3.9-5b: Notify California Department of Conservation, Division of Oil, Gas, and Geothermal Resources.</b> The project proponent shall comply with the following:</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>1. In the event any abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, shall be contacted for requirements and approval; copies of said approvals shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>2. The California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, may determine that remedial plugging operations may be required and shall be contacted and brought to the generation tie-line site to make a proper assessment of the suspect materials.</li> </ol>	
		<p><b>MM 3.9-6b: Asbestos-containing Material.</b> The project proponent shall comply with the following:</p> <ol style="list-style-type: none"> <li>1. In the event that suspect asbestos-containing materials are uncovered during project construction, work within the vicinity of the discovery shall immediately halt and a certified asbestos hazardous materials professional shall be contacted and brought to the generation tie-line site to make a proper assessment of the suspect materials.</li> <li>2. All potentially friable asbestos containing materials shall be removed in accordance with Federal, State, and local laws and the National Emissions Standards for Hazardous Air Pollutants guidelines prior to ground disturbance that may disturb such materials.</li> <li>3. All demolition activities shall be undertaken in accordance with California Occupational Safety and Health Administration standards, as contained in Title 8 of the California Code of Regulations, Section 1529, to protect workers from exposure to asbestos. Materials containing more than 1 percent asbestos shall also be subject to Eastern Kern Air Pollution Control District's (EKAPCD) regulations. Demolition shall be performed in conformance with Federal, state, and local laws and regulations so that construction workers and/or the public avoid significant exposure to asbestos-containing materials.</li> </ol>	
<p><b>Impact 3.9-3:</b> Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.</p>	<p>Potentially significant</p>	<p>Mitigation Measure MM 3.9-7b</p>	<p>Less than significant</p>
<p><b>Impact 3.9-4:</b> Exposes 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.</p>	<p>Less than significant</p>	<p><b>MM 3.9-8b: Fire Safety Plan.</b> Prior to the issuance of grading or building permits, the project proponent shall develop and implement a fire safety plan for use during construction, operation, and decommissioning. The project proponent shall submit the plan, along with maps of the project generation tie-line sites and access roads, to the Kern County Fire Department for review and approval. The fire safety plan shall contain notification procedures and emergency fire precautions including, but not limited to the following:</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>1. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters will be in good working order.</li> <li>2. Light trucks and cars with factory-installed (type) mufflers will be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition.</li> <li>3. Fire rules will be posted on the project bulletin board at the contractor's field office and areas visible to employees.</li> <li>4. Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials.</li> <li>5. 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.</li> <li>6. The project proponent shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.</li> </ol>	
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.9-1b through MM 3.9-8b	Less than significant
<b>3.10 Infrastructure</b>			
<b>Impact 3.10-1:</b> The project would exceed wastewater treatment requirements of the applicable regional water quality control board.	Potentially significant	<b>MM 3.10-1b: Coordinate with Utility Service Providers.</b> Prior to construction of generation tie-lines, the developer shall coordinate with appropriate utility service providers and related agencies to determine the location of utilities and ensure that adequate wastewater treatments exist. The developer will also incorporate into construction specifications the requirement that the contractor develop a plan to reduce service interruptions. The plan shall be approved by Kern County and submitted to appropriate utility providers. Utilities to be addressed in the plan shall include, but may not be limited to: water, recycled water, sewer, gas, electricity, telephone, cable.	Less than significant
<b>Impact 3.10-2:</b> Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Potentially significant	None required	Less than significant
<b>Impact 3.10-3:</b> Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Less than significant	Mitigation Measure MM 3.10-1b	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 3.10-4:</b> The project has sufficient water supplies available to serve the project from existing entitlements and resources, and new or expanded entitlement is not needed.	Less than significant	None required	Less than significant
<b>Impact 3.10-5:</b> Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.	Potentially significant	Implement Mitigation Measure MM 3.11-1a, and: <b>MM 3.10-2b: Recycling Coordinator.</b> During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. <ol style="list-style-type: none"> <li>1. An onsite Recycling Coordinator shall be designated by the project proponent to facilitate recycling as part of the Maintenance, Trash Abatement and Pest Management Program.</li> <li>2. The Recycling Coordinator shall facilitate recycling of all generation tie-line construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.</li> <li>3. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal.</li> <li>4. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.</li> </ol>	Less than significant
<b>Impact 3.10-6:</b> Fail to comply with federal, state, and local statutes and regulations related to solid waste.	Less than significant	None required	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.10-1b, MM 3.10-2b, MM 3.11-1b, and MM 3.16-3b	Less than significant
<b>3.11 Land Use</b>			
<b>Impact 3.11-1:</b> The project would conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the projects (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	None required	Less than significant
<b>Cumulative</b>	Potentially significant	<b>MM 3.11-1b: Decommission Plan.</b> Prior to issuance of any gen-tie building permit, the project proponent shall provide the Kern County Planning and Natural Resources Department with a Decommission Plan for review and	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>approval. The plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent.</p> <ol style="list-style-type: none"> <li>1. The Decommission Plan including, but not limited to the following:               <ol style="list-style-type: none"> <li>a. Factor in the cost to remove the gen-tie lines and other support structures, replace any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land.</li> <li>b. Salvage value for the support structures shall be included in the financial assurance calculations.</li> <li>c. The assumption, when preparing the estimate, is that the project proponent is incapable of performing the work or has abandoned the gen-tie lines, thereby resulting in the County hiring an independent contractor to perform the decommission work.</li> </ol> </li> <li>2. In addition to submittal of a Decommission Plan for the gen-tie lines, the project proponent shall post or establish and maintain with the County financial assurances related to the deconstruction of the gen-tie sites as identified on the approved Decommission Plan should at any point in time the project proponent 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:               <ol style="list-style-type: none"> <li>a. An irrevocable letter of credit.</li> <li>b. A surety bond.</li> <li>c. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommission plan.</li> </ol> </li> <li>3. 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:               <ol style="list-style-type: none"> <li>a. 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.</li> <li>b. 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 to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan.</li> <li>c. Should the project proponent deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.</li> <li>d. Financial institution or Surety Company shall be licensed to conduct business in the state of California.</li> </ol> </li> <li>4. 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 decommission of the site by the County shall be returned to the project proponent.</li> <li>5. Should any portion of the generation tie-line poles not be in operational condition for a consecutive period of 24 months, that portion of the site shall be deemed abandoned and shall be removed within 60 days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent, by the County. Within this 60-day period, the property owner, solar field owner, or project proponent may provide the County a written request and justification for an extension for an additional 12 months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance.</li> </ol>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
6. In no case shall a generation tie-line pole which has been deemed abandoned be permitted to remain in place for more than 48 months from the date the solar facility was first deemed abandoned.			
<b>3.12 Noise</b>			
<p><b>Impact 3.12-1:</b> Expose persons to or generate noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies.</p>	<p>Potentially significant</p>	<p><b>MM 3.12-1b: Noise Reduction.</b> To reduce temporary generation-tie line construction-related noise impacts, the following shall be implemented by the project proponent:</p> <ol style="list-style-type: none"> <li>1. In the event a noise-sensitive receptor is constructed within 1,000 feet of the tie-line site:                             <ol style="list-style-type: none"> <li>a. Equipment staging shall be located in areas that will create the greatest distance between generation tie-line construction-related noise sources and noise-sensitive receptors nearest the tie-line site during generation tie-line construction to the extent practical.</li> <li>b. The project contractor shall place all stationary tie-line construction equipment so that emitted noise is directed away from sensitive receptors nearest the gen-tie line site.</li> </ol> </li> <li>2. The construction contractor shall ensure all generation tie-line construction equipment is equipped with manufacturers approved mufflers and baffles.</li> <li>3. The construction contractor shall establish a noise disturbance coordinator for the project during construction of the generation tie lines. 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> <li>4. During all construction or decommissioning phases of the generation tie-lines, 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 (Municipal Ordinance Code 8.36.020).</li> </ol> <p><b>MM 3.12-2b: Public Notification.</b> Prior to commencement of any generation tie line construction activities (i.e., mobilization of construction equipment, initial grading, etc.), the project proponent shall provide written notice to the public through mailing a notice.</p> <ol style="list-style-type: none"> <li>1. The mailing notice shall be to all residences within 1,000 feet of the gen-tie sites, 15 days or less prior to generation tie-line 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.</li> <li>2. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the generation tie line construction site or adjacent to the nearest public access to the main construction entrance throughout construction activities that shall provide the generation tie line construction schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator.</li> <li>3. 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.</li> </ol>	<p>Less than significant</p>
<p><b>Impact 3.12-2: Would the project result in the exposure of persons to, or generate, excessive groundborne</b></p>	<p><b>Less than significant</b></p>	<p>None required</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>vibration or groundborne noise levels.</b>			
<b>Impact 3.12-3:</b> Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Potentially significant	Mitigation Measures MM 3.12-1b and MM 3.12-2b	Less than significant
<b>Impact 3.12-4:</b> For a project located within the Kern County Airport Land Use Compatibility Plan (ALUCP), would the project expose people residing or working in the project area to excessive noise levels.	Less than significant	Mitigation Measures MM 3.12-1b and MM 3.12-2b	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.12-1b and MM 3.12-2b	Less than significant
<b>3.13 Public Services</b>			
<b>Impact 3.13-1:</b> The project would result in adverse physical impacts associated with the need for new or physically altered governmental facilities—the construction of which could cause significant environmental impacts—in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection and law enforcement services.	Less than significant	<p>Implement Mitigation Measure MM 3.9-8b, and:</p> <p><b>MM 3.13-1b: Funding for County Fire and Sheriff's Protection.</b> The project proponent shall implement the following mitigation steps at the project site:</p> <ol style="list-style-type: none"> <li>1. For facility operation, the project proponent shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$28.84 per 1,000 square feet of panel-covered ground for the facility operation and related onsite structures for the entire covered area of the project. The total amount shall be divided by the number of years of operation and paid on a yearly basis. If completed in phases, the annual amount shall be based on the square footage of ground covered by April 30 of each year. The amount shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year for each and every year of operation. Copies of payments made shall be submitted to the Kern County Planning and Natural Resources Department.</li> <li>2. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than \$1,000 per megawatt per year, then they will pay those taxes plus the amount necessary to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.</li> <li>3. The project proponent 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 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. The project proponent shall allow the County to use this sales tax information publicly for reporting purposes.</li> </ol>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		4. Prior to the issuance of any building permits on the property, the project proponent 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 the local Kern County communities. The project proponent 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.	
<b>Cumulative</b>	Less than significant	Mitigation Measures MM 3.13-1b and MM 3.9-8b	Less than significant
<b>3.14 Socioeconomics and Environmental Justice</b>			
<b>Cumulative</b>	Less than significant	No mitigation measures are recommended to address socioeconomic impacts related to the Alternative A, Alternative B, or Alternative C.	Less than significant
<b>3.15 Transportation</b>			
<b>Impact 3.15-1:</b> The project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Less than significant	<b>MM 3.15-2b: Traffic Control Plan.</b> Prior to the issuance of construction or building permits, the project proponent shall: <ol style="list-style-type: none"> <li>1. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:                             <ol style="list-style-type: none"> <li>a. Timing of deliveries of heavy equipment and building materials.</li> <li>b. Directing construction traffic with a flag person.</li> <li>c. 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.</li> <li>d. Ensuring access for emergency vehicles to the tie-line sites.</li> <li>e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections.</li> <li>f. Maintaining access to adjacent property.</li> <li>g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the a.m. and p.m. peak hour, distributing construction traffic flow across alternative routes to access the gen-tie sites, and avoiding residential neighborhoods to the maximum extent feasible.</li> </ol> </li> <li>2. Obtain all necessary encroachment permits for the work within the road right-of-way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department and the Kern County Public Works Department-Development Review.</li> <li>3. Prior to construction, the project proponent shall submit engineering drawings of proposed access road design for the review and approval of the Kern County Public Works Department.</li> </ol>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ol style="list-style-type: none"> <li>4. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the state and/or Kern County.</li> <li>5. Submit documentation that identifies the roads to be used during construction. The project proponent shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department.</li> <li>6. Within 30 days of completion of construction, the project proponent shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent's engineer, shall determine the extent of remediation required, if any.</li> </ol>	
<p><b>Impact 3.15-2:</b> The project would conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards developed by the County congestion management agency for designated roads or highways.</p>	<p>Less than significant</p>	<p>Implement Mitigation Measure MM 3.15-2b and:</p> <p><b>MM 3.15-1b: Remove Easement Obstructions.</b> All easements shall be kept open, clear, and free from buildings and structures of any kind pursuant to Chapters 18.50 and 18.55 of the Kern County Land Division Ordinance. All obstructions, including utility poles and lines, tees, pole signs, or similar obstructions, shall be removed from the ultimate road rights-of way in accordance with Section 18.55.030 of the Land Division Ordinance. Compliance with this requirement is the responsibility of the applicant/project proponent and may result in significant financial expenditures.</p>	<p>Less than significant</p>
<p><b>Impact 3.15-3:</b> The project would substantially increase hazards due to a design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</p>	<p>Potentially significant</p>	<p>Mitigation Measure MM 3.15-1b</p>	<p>Less than significant</p>
<p><b>Impact 3.15-4:</b> The project would result in inadequate emergency access.</p>	<p>Less than significant</p>	<p>Mitigation Measure MM 3.15-1b</p>	<p>Less than significant</p>
<p><b>Cumulative</b></p>	<p>Potentially significant</p>	<p>Mitigation Measures MM 3.15-1b and MM 3.15-2b</p>	<p>Less than significant</p>
<p><b>3.16 Water Resources</b></p>			
<p><b>Impact 3.16-1:</b> The project could violate water quality standards or waste discharge requirements.</p>	<p>Potentially significant</p>	<p>Implement Mitigation Measure MM 3.9-1b, and:</p> <p><b>MM 3.16-1b: Stormwater Pollution Prevention Plan.</b> Prior to issuance of a grading permit for construction or decommissioning for the generation tie-line installation, the developer shall submit a Stormwater Pollution Prevention Plan to the Kern County Engineering, Surveying, and Permit Services Department that specifies best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment and other pollutants from moving offsite and into receiving waters. The requirements of the</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Best management practices categories employed onsite would include erosion control, sediment control, good housekeeping, and post-construction. Best management practices for the generation tie-line construction phase shall include, but not be limited to, those listed below.</p> <ol style="list-style-type: none"> <li>1. Erosion Control               <ol style="list-style-type: none"> <li>a. Use of existing roadways to the maximum extent possible</li> <li>b. Limiting grading to the minimum area necessary for construction, operation and decommissioning of the project</li> <li>c. Encourage maintenance of existing topography and limit vegetation disturbance/removal such as through mowing to the maximum extent possible</li> </ol> </li> <li>2. Sediment Control               <ol style="list-style-type: none"> <li>a. Implementing fiber rolls and sand bags around drainage areas and the site perimeter</li> <li>b. Stockpiling and disposing of demolition debris, concrete, and soil properly</li> <li>c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas</li> </ol> </li> <li>3. Good Housekeeping               <ol style="list-style-type: none"> <li>a. Implement proper protections for fueling and maintenance of equipment and vehicles</li> <li>b. Manage waste and aggressively control litter</li> </ol> </li> <li>4. Post Construction               <ol style="list-style-type: none"> <li>a. Stabilize soil in disturbed areas either by revegetation or chemical stabilizer</li> <li>b. Implement any necessary drainage mitigation</li> <li>c. Revegetate any disturbed areas</li> </ol> </li> </ol> <p><b>MM 3.16-2b: Federal Emergency Management Agency Flood Zone Mapping and Strategic Construction Siting and Facility Placement.</b> Prior to the preparation of Final Flood Hazard Assessment and Grading Plan the developer would consult with the Federal Emergency Management Agency for flood zone mapping services of the estimated area of impact on generation tie line routes that are currently unmapped. Once flood risks are determined by the Federal Emergency Management Agency, these official flood zone boundaries would be incorporated into the final version of all technical hydrology and flood-related documents prepared for the project so that appropriate design recommendations for the projects can be made. Based on specific flood zone information, construction staging areas and final project structures would be sited to avoid existing hydrologic features (including flood zones and drainages) to the maximum extent possible.</p> <p><b>MM 3.16-3b: Final Flood Hazard Assessment.</b> Prior to construction, a Final Flood Hazard Assessment shall be prepared for the project. The Final Flood Hazard Assessment shall describe the existing flood risks onsite and how the project structures would be designed to incorporate the requirements of the Kern County Floodplain Management Ordinance. The existing flood risks on the generation tie line routes shall be determined through developer coordination with the Federal Emergency Management Agency. For any generation tie line routes installed within flood zones, final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated maximum flood depths. Generation tie line routes shall be graded to direct potential flood waters into channels adjacent to the existing and proposed right of ways without increasing the water surface elevations more than 1 foot or as otherwise required by Kern County's Floodplain Management Ordinance. The Final Flood</p>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Hazard Assessment shall be approved by the Floodplain Management Section of the Kern County Engineering, Surveying, and Permit Services Department prior to the issuance of a grading permit for the project.</p>	
		<p><b>MM 3.16-4b: Grading Plan.</b> Prior to commencement of generation tie-line construction or decommissioning activities, the developer shall prepare a Grading Plan per the Kern County Grading Code and Kern County Grading Guidelines. The Grading Plan shall include the location of all existing drainages onsite, project grading details and the drainage devices and erosion control features that would be installed along the generation tie line routes to minimize excess site runoff, erosion and sedimentation. Examples of features installed onsite that would minimize runoff, erosion and sedimentation include energy dissipaters and water quality inlets. The plan shall also disclose flood protection measures implemented for structures onsite as identified in the Flood Hazard Assessment. Flood zone information used in the preparation of the Grading Plan would be based on flood zone maps obtained from developer consultation with FEMA. The Grading Plan shall be approved by County prior to issuance of a grading permit.</p>	
<p><b>Impact 3.16-2:</b> The project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.</p>	<p>Potentially significant</p>	<p>None required</p>	<p>Less than significant</p>
<p><b>Impact 3.16-3:</b> The project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation and/or flooding onsite or off site.</p>	<p>Potentially significant</p>	<p>Mitigation Measures MM 3.16-1b through MM 3.16-4b</p>	<p>Less than significant</p>
<p><b>Impact 3.16-4:</b> The project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.</p>	<p>Potentially significant</p>	<p>Mitigation Measures MM 3.16-1b, MM 3.16-4b, and:</p> <p><b>MM 3.16-5b: Hydrologic Analysis and Drainage Plan.</b> Prior to the issuance of a grading permits for the generation tie-lines, the project proponent shall complete a hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the generation tie line routes. The study shall include, but is not limited to the following:</p> <ol style="list-style-type: none"> <li>1. Numerical stormwater model for the generation tie-line site, and would evaluate existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event.</li> <li>2. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.</li> <li>3. 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 installation of generation tie lines, as well as implementation of</li> </ol>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.</p> <p>4. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards, and approved by the Kern County Public Works Department prior to the issuance of grading permits for the generation tie-line installation.</p>	
<b>Impact 3.16-5:</b> The project could otherwise substantially degrade water quality.	Potentially significant	Mitigation Measures MM 3.16-1b through MM 3.16-4b	Less than significant
<b>Impact 3.16-6:</b> The project could place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Mitigation Measures MM 3.16-2b through MM 3.16-4b	Less than significant
<b>Cumulative</b>	Potentially significant	Mitigation Measures MM 3.9-1b, and MM 3.16-1b through MM 3.16-4b	Less than significant
<b>5 Consequences of Project Implementation</b>			
<b>Impact 5-1:</b> The project could result in an inefficient, wasteful, and/or unnecessary use of energy for transportation of materials and worker commutes.	Potentially Significant	<p><b>MM 5-1b:</b> The developer shall develop and implement a construction- and decommissioning-phase Transportation Energy Management Plan in consultation with Kern County and Edwards AFB to reduce construction- and decommissioning-related transportation energy consumption. The plan shall include but not be limited to the following measures:</p> <ol style="list-style-type: none"> <li>1. Require that onsite equipment and vehicle operators minimize equipment and vehicle idling time either by shutting equipment off when not in use or by limiting idling time to a maximum of 5 minutes.</li> <li>2. Designate a Transportation Energy Manager (TEM) to coordinate ridesharing by construction and decommissioning employees. The TEM shall encourage carpooling by posting commuter ride sign-up sheets, maintaining and posting an employee home zip code map.</li> <li>3. Provide priority parking onsite for vehicles with two or more passengers.</li> <li>4. When feasible, arrange for a single construction vendor who makes deliveries for several items.</li> <li>5. Plan construction delivery and waste hauling routes to eliminate unnecessary trips.</li> <li>6. The plan shall be submitted to Kern County and to Edwards AFB for review and approval prior to the start of construction.</li> </ol>	Less than significant



# CHAPTER 1

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## Introduction and Purpose and Need

### 1.1 Introduction

This Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) is a joint document published by the U.S. Air Force (USAF or Air Force) and the County of Kern, California (County). The Air Force is the lead agency pursuant to the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) Parts 1500-1508. The County is a cooperating agency pursuant to the NEPA regulation in 40 CFR Section 1501.6 and the California Environmental Quality Act (CEQA) lead agency pursuant to 14 California Code of Regulations (CCR) Section 15051 of the guideline for implementing CEQA. This document provides information needed by the USAF and County to make a determination on whether or not to implement a solar project on the 4,000-acre Edwards Air Force Base (AFB) property (the Proposed Action). This EIS/EIR analysis evaluates at a project level the impacts of the Edwards AFB Solar Project (herein identified as the proposed project or Proposed Action).

The Air Force Proposed Action is to lease land to a developer for the construction, operation, and maintenance of a solar photovoltaic (PV) renewable energy project at Edwards AFB. The final scale of the Proposed Action is anticipated to be up to 750 megawatts (MW), with the generated energy distributed to investor-owned utilities, municipalities, and other energy off-takers. The construction scale of such a project would require one or more leases and development of up to 4,000 acres of non-excess land at Edwards AFB. Non-excess property in general terms includes those assets that are not anticipated to be needed for the duration of the lease, but which the Air Force may need at a future date or needs to retain ownership of for a mission-related reason.

A franchise agreement with the County would be required to use County franchise rights for routing of a 230-kilovolt (kV) generation-tie (gen-tie) line from the proposed solar facility to a point of interconnection where power generated by the project can be delivered to the grid. Points of interconnection may include the Southern California Edison (SCE) Windhub Substation and/or the privately owned Westwind Substation.

The proposed solar facility would be located on Edwards AFB, approximately 6 miles northeast of the community of Rosamond and 6 miles south of Mojave, in southeastern Kern County, California (**Figure 1-1**).

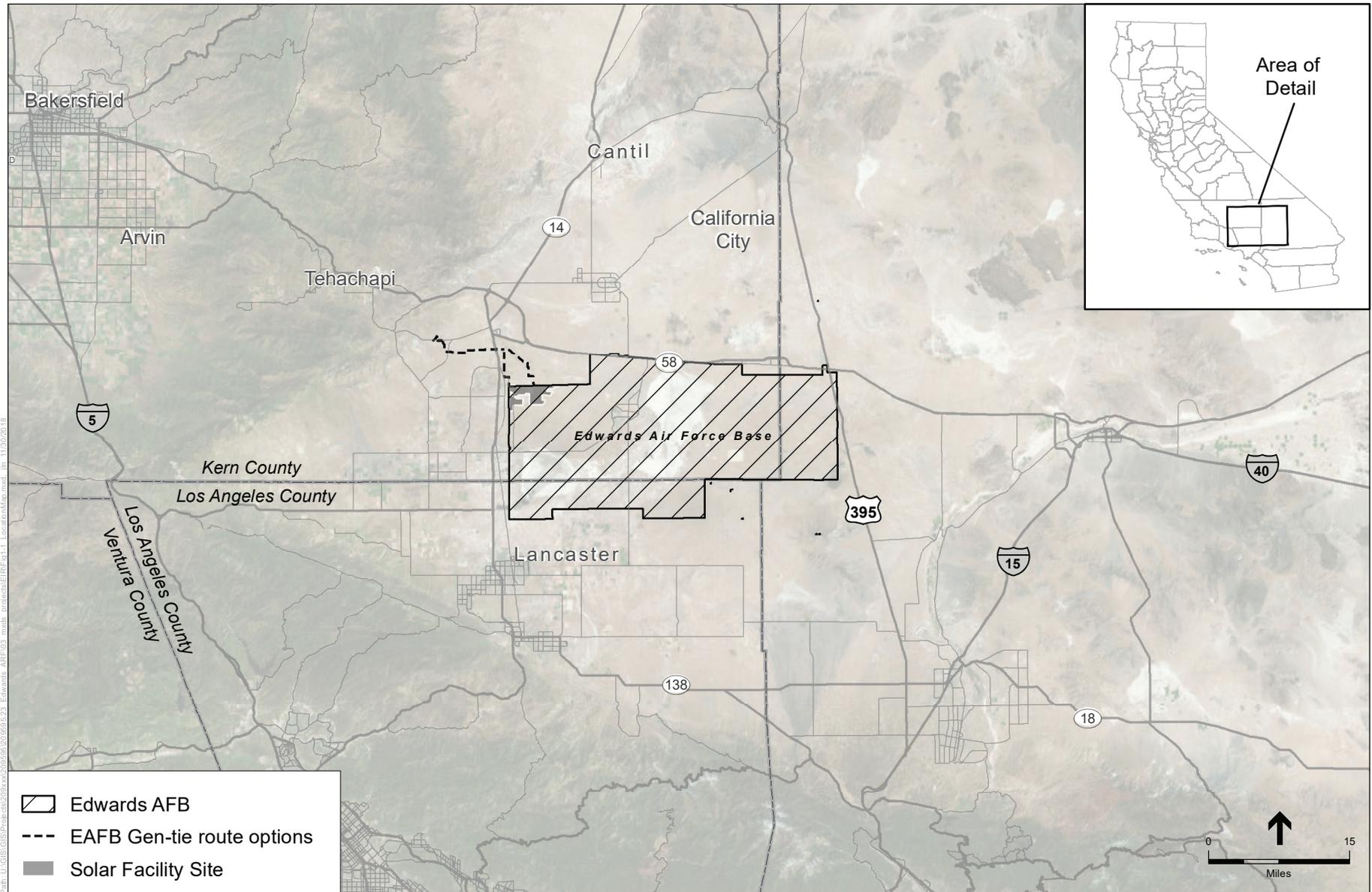


Figure 1-1: PROJECT VICINITY

1 Therefore, pursuant to the Air Force’s Environmental Impact Analysis Process (EIAP) regulation,  
2 32 CFR Part 989., which implements the NEPA process, and the state’s CEQA guidelines (Public  
3 Resources Code Section 2100 et seq and California Code of regulations, Title 14, Section 15000 et  
4 seq), the Air Force and County are preparing this EIS/EIR to inform the public and other interested  
5 entities of the Proposed Action and alternatives and seek their comments. This EIS/EIR process is  
6 intended to provide opportunities for public involvement to better assess the Proposed Action’s and  
7 alternatives’ impacts to the human and natural environment. The resulting information will be  
8 considered by the Air Force to achieve a Final EIS/EIR to allow informed decision-making on  
9 whether or how to proceed with the Proposed Action and alternatives. Additionally, the County  
10 will consider the information in its determination of whether to authorize the franchise agreement.  
11 Finally, this documented information may also be considered by other governmental or regulatory  
12 agencies associated with any required consultations and/or permits for this Proposed Action and  
13 alternatives.

## 14 **1.2 Background**

15 The mission of the Air Force is to fly, fight, and win in air, space and cyberspace. The 412th Test  
16 Wing is the host wing for Edwards AFB, California. The 412th Test Wing plans, conducts,  
17 analyzes, and reports on all flight and ground testing of aircraft, weapons systems, software, and  
18 components as well as modeling and simulation for the Air Force. The wing oversees day-to-day  
19 base operations and provides support for over 10,000 military, federal civilian, and contract  
20 personnel assigned to Edwards AFB.

21 In 2007 the Air Force Real Property Agency (AFRPA) now known as Air Force Civil Engineer  
22 Center/Installations Directorate (AFCEC/CI) completed a comprehensive analysis of the available  
23 lands on Air Force bases and their potential to support renewable energy development through the  
24 Enhanced Use Lease (EUL) program (*Renewable Energy Enhanced Use Lease Opportunity  
25 Summary Report*; AFRPA, 2007). The EUL program allows the Air Force to lease underutilized,  
26 non-excess lands to a third party that would generate monetary or in-kind consideration to the Air  
27 Force while also optimizing the value and utility of these lands under authority granted by 10 U.S.  
28 Code (USC) Section 2667. The Air Force may lease non-excess land to third parties under specified  
29 conditions for the fair market value of the leasehold interest. Results of the 2007 analysis showed  
30 that Edwards AFB possessed considerable acreage of non-excess Air Force property that could be  
31 more fully utilized through the EUL program. The study found that approximately 6,000 acres of  
32 land in the northwest corner of Edwards AFB was suitable for renewable energy development, and  
33 had high potential and a market to support a solar energy project (AFRPA, 2007). The report  
34 concluded that development of renewable solar energy at Edwards AFB would support the  
35 Department of Defense (DoD) and Air Force renewable energy goals and achieve other value that  
36 would support base operations and maintenance projects.

37 In 2011, SunEdison LLC proposed development of the Oro Verde Solar Project on the  
38 approximately 6,000-acre EUL property site in the same project area currently proposed in this EIS  
39 for the Edwards AFB Solar Project. SunEdison submitted development applications to the Air  
40 Force and County and conducted several technical environmental analyses to support those  
41 applications. The Air Force and County initiated NEPA and CEQA scoping processes in May 2013.

1 Public scoping meetings were conducted in June 2013. In late 2014, SunEdison LLC stopped  
2 development of the project.

3 Upon termination of the agreement with SunEdison, LLC, the Air Force did not have an agreement  
4 in place with an energy developer and therefore revised the environmental impact analysis for the  
5 project from a site-specific analysis to a broader programmatic level of analysis to support future  
6 project planning. In June 2016, the Air Force released an updated Notice of Intent to describe this  
7 change.

8 In December 2016, the Air Force released a new Request for Qualifications for solar development  
9 through the EUL program. In 2017, private offerors submitted proposals to Edwards AFB to  
10 construct, operate, and maintain a utility-scale solar PV energy-generating facility. Edwards AFB  
11 property would be developed under the terms of a site development lease on up to 4,000 acres of  
12 non-excess real property under the control of the Secretary of the Air Force. A developer was  
13 selected by the Air Force and filed an application with the County for a franchise agreement for  
14 routing a gen-tie transmission line from the proposed solar facility to the SCE Windhub Substation  
15 and/or the privately owned Westwind Substation.

16 In November 2017, the Air Force published a new Notice of Intent to prepare a project-level  
17 EIS/EIR to once again propose and evaluate the environmental impacts of a specific project. The  
18 solar facility proposed under the current Proposed Action has the same general design and  
19 components as the former Oro Verde Solar Project proposed in 2013, and the proposed solar array  
20 continues to be sited around sensitive environmental features to reduce impacts. The gen-tie route  
21 options associated with the Proposed Action follow different alignments than those proposed for  
22 the former Oro Verde Solar Project. Because existing conditions at the site and immediately  
23 surrounding areas have not changed substantially since 2013, several of the technical environmental  
24 analyses that were prepared for the Oro Verde Solar Project have been used in the evaluation of  
25 environmental impacts of the Proposed Action. As described in further detail in Chapter 3,  
26 *Environmental Setting and Environmental Consequences*, where appropriate, additional and/or  
27 updated data has been provided to verify the applicability of the former analyses to the current  
28 Proposed Action. Additionally, new technical analyses have been conducted for the Proposed  
29 Action gen-tie alignment options.

## 30 **1.3 Purpose and Need**

### 31 **1.3.1 NEPA**

32 The purpose of the Proposed Action is to meet Air Force objectives to optimize the value of  
33 non-excess lands at Edwards AFB by leasing property for renewable energy development in  
34 accordance with 10 USC Section 2667 and to promote the efficient and economical use of real  
35 property assets at Edwards AFB in accordance with Executive Order (EO) 13327, Federal Real  
36 Property Asset Management. Pursuing an EUL renewable energy development would support the  
37 Air Force's requirements to meet federal renewable energy mandates while supporting efforts to  
38 achieve DoD and Air Force goals for renewable energy generation on DoD lands to enhance energy  
39 conservation, availability, and efficiencies and also reduce greenhouse gas (GHG) levels. Edwards  
40 AFB identified several thousand acres of non-excess lands it could lease at fair market value that

1 would achieve a higher and better land use through development of a renewable solar energy  
2 project.

3 DoD leasing tools such as 10 USC Section 2667, *Leases: Non-Excess Property of Military*  
4 *Departments and Defense Agencies*, allow the Air Force, through its EUL program, to lease  
5 non-excess real property for terms that promote the national defense or are in the public interest. In  
6 seeking solar energy development, Edwards AFB is also pursuing objectives outlined in the  
7 February 14, 2007, Department of the Air Force memorandum titled *Pursuing "Value-Based"*  
8 *Transactions Involving Air Force Real Property Assets*. This memorandum defines organizational  
9 responsibilities for Air Force organizations to optimize the value of real property assets using  
10 authorized tools such as the EUL program.

11 Additionally, the Air Force has continued to develop and refine its energy program and goals for  
12 increased energy efficiency and renewable energy production on its bases. On January 6, 2017, the  
13 Air Force released their Energy Flight Plan, 2017–2036. Goals within the energy strategy include  
14 monetizing non-excess assets such as land in return for consideration that advances energy  
15 resiliency objectives. Development of the proposed project will help the Air Force to meet the goal  
16 of optimizing the value of non-excess property while supporting Air Force energy goals. The Air  
17 Force is also working to achieve reductions of GHG emissions through energy conservation,  
18 increased energy efficiencies of its facilities, and increased consumption of its energy needs from  
19 renewable energy sources. Implementation of the Proposed Action would minimize global GHG  
20 emissions by producing energy from renewable, non-carbon-based sources instead of promoting  
21 the consumption of energy derived from fossil fuels. The proposal of leasing Air Force land for  
22 development of the Proposed Action would produce a new renewable energy source beneficial to  
23 the state and the public and would support the achievement of established federal, DoD, and Air  
24 Force energy mandates and goals.

25 Currently, Edwards AFB facilities must be renovated or in some cases outdated facilities may need  
26 to be demolished in order to reduce energy consumption and increase energy efficiency in  
27 accordance with 10 USC Section 2911. Lease consideration received in return for the fair market  
28 value of leased land would additionally provide Edwards AFB with the ability to implement  
29 installation projects to support its own sustainable energy efficiencies, conservation, and reduced  
30 GHG emissions goals. In accordance with a policy memorandum issued from the Undersecretary  
31 of Defense (Installations and Environment), at least 50 percent of the lease consideration generated  
32 from the EUL would be used for improving energy conservation (OSD, November 2012).  
33 Therefore, development of the Proposed Action on land leased by Edwards AFB would support  
34 successful achievement of its sustainable renewable energy goals while also optimizing the use of  
35 non-excess Air Force property in a manner consistent with national defense and public interests.

36 The Air Force need includes meeting the following objectives:

- 37 • Evaluate renewable energy projects on non-excess Air Force real property that would  
38 promote the efficient and economic use of federal real property under EO 13327, Federal  
39 Real Property Management and Air Force policy guidance (Air Force Policy  
40 Memorandum, February, 2007).

- 1 • Support attainment of federal, DoD, and Air Force energy and facilities mandates and goals  
2 including 10 USC Section 2911 and the Energy Flight Plan 2017-2036 (Air Force, January  
3 2017) supporting utility-scale projects that increase renewable energy capacity and its  
4 distribution.

### 5 1.3.2 CEQA

6 As a cooperating agency, the County's purpose is to ensure the Proposed Action or alternatives are  
7 implemented in a manner consistent with the County's General Plan and Mojave Specific Plan,  
8 Soledad Mountain-Elephant Butte Specific Plan, West Edwards Road Settlement Specific Plan,  
9 and the Actis Interim Rural Community Plan. These plans prescribe land use designations and  
10 transportation plans in the area potentially affected by the Proposed Action, and are implemented  
11 through standards described within the Kern County Zoning Ordinance. The County is also  
12 responsible for regulating public utilities within public rights-of-way (ROWs) through the approval  
13 of franchise agreements. Franchise agreements are discretionary actions, and as such are required  
14 to comply with CEQA. The franchise agreement would permit the construction of portions of the  
15 gen-tie line within public and private ROW between the proposed Edwards AFB leased site to the  
16 point of interconnection (off Edwards AFB) of the generated renewable energy or power that is  
17 managed by public utilities under California Public Utilities Commission (CPUC) regulations.

## 18 1.4 Proposed Project Objectives

19 CEQA requires a statement of project specific objectives (Section 15124 of the CEQA Guidelines).

20 The following are the objectives for the Proposed Action:

- 21 • Establish a solar PV generating facility greater than 100 MW in order to assist the state of  
22 California in achieving the Renewable Portfolio Standard (RPS) for 2030, by providing a  
23 significant new source of renewable energy (California State Assembly Bill [AB] 32,  
24 Senate Bill [SB] 1078, SB 107, SB 350, and SB 2).
- 25 • Supply clean, safe, renewable energy.
- 26 • Produce and transmit electricity at a competitive cost and in a manner that is eligible for  
27 commercial financing.
- 28 • Use technology that is available, proven, efficient, easily maintained, recyclable, and  
29 environmentally sound.
- 30 • Support the economic development of Kern County, Los Angeles County, and the State of  
31 California.
- 32 • Enhance existing electrical distribution infrastructure and provide greater support to  
33 existing and future customer loads.
- 34 • Minimize environmental effects by:
  - 35 ○ Using existing electrical distribution facilities, ROW, roads, and other existing  
36 infrastructure, where practicable
  - 37 ○ Minimizing impacts on threatened and/or endangered species
  - 38 ○ Minimizing water use; and

- 1           ○ Reducing GHG emissions.
- 2           • Advance Department of Defense energy resilience and security goals by optimizing the
- 3           value of under-utilized Air Force real property assets consistent with Department of
- 4           Defense Instruction 4170.11, Installation Energy Management and the Air Force Energy
- 5           Flight Plan, 2017–2036.

## 6   **1.5 Scope of the EIS/EIR and Decisions to Be Made**

7   The scope of this EIS/EIR document evaluates all components of the Proposed Action and  
8   alternatives that would be associated with establishment of the proposed solar facility. This analysis  
9   describes and evaluates the potential environmental effects that are expected to result from  
10   construction, grid connection, operation, and maintenance of the Proposed Action and alternatives  
11   and discusses mitigation measures that, if adopted, would avoid, minimize, or mitigate significant  
12   adverse environmental impacts identified.

13   This EIS/EIR describes reasonable alternatives to the Proposed Action as well as the environmental  
14   consequences of the Proposed Action and alternatives. This document will also comply with  
15   applicable CEQA requirements and guidelines and will allow the County to use this EIS/EIR in its  
16   environmental review and approvals for the gen-tie line Franchise Agreement with the Developer  
17   and other pertinent development or construction permit applications and approvals. Where the  
18   applicable Air Force and/or County regulations for the proposed project and alternatives require a  
19   higher standard of environmental analysis, then the stricter requirements are used to complete the  
20   appropriate level of environmental analysis. For example, CEQA requires that a separate discussion  
21   of mitigation measures and growth inducing impacts be included during consideration of a  
22   proposal. These factors will be included in this EIS/EIR to meet CEQA requirements.

23   Normally, a solely federal action occurring on Air Force lands would not require the issuance of  
24   state or local discretionary permits that trigger the CEQA Guidelines and requirements. Ordinarily,  
25   the County’s land use regulations do not apply to federally owned and administered real property;  
26   however, this Proposed Action involves private commercial development on principally leased  
27   property from the Air Force, who owns the land with proprietary jurisdiction. The Proposed Action  
28   also requires development (off Edwards AFB) on private and/or public lands. Therefore, the  
29   Developer would be required to obtain applicable state and/or local permits, licenses, approvals, or  
30   agreements triggering CEQA compliance. The Proposed Action under the Air Force’s EUL  
31   Program generates compliance with NEPA regulations and the Air Force’s implementing EIAP  
32   regulations.

33   The environmental impacts and mitigations and monitoring would reflect the requirements  
34   applicable to private or public development and construction by the Developer in the state of  
35   California and its CEQA guidelines and requirements. After the EIS/EIR is completed, the Air  
36   Force will prepare a Record of Decision (ROD) that will address key decisions issues and  
37   conditions, including significant adverse impacts associated with the Proposed Action under  
38   applicable federal and state or local laws, regulations, and requirements. Further, the Air Force has  
39   requested that Kern County serve as permit authority over any permits required for construction  
40   and operation of the project. In the absence of a Memorandum of Understanding (MOU) indicating

1 otherwise, a county’s land use regulations would not automatically apply to property administered  
2 by federal and state governments. However, for private commercial or public development on Air  
3 Force–leased land, the Developer would need to seek Kern County building permits and other  
4 permits and approvals as applicable and the Developer will be responsible for implementing  
5 necessary mitigation measures.

6 The EIS/EIR will also discuss proposed mitigation measures needed to reduce environmental  
7 impacts. Additionally, the County will use the information in this document to consider  
8 authorization of a franchise agreement to the Developer for routing the gen-tie line from the  
9 proposed PV facility to its point of interconnection off Edwards AFB.

10 Upon publication of a Final EIS/EIR that considers and addresses all public comments received,  
11 the Air Force will prepare a ROD on whether to authorize the lease of Air Force property to the  
12 Developer for use in construction of a solar PV facility pursuant to the Air Force EIAP regulations.  
13 The County Board of Supervisors will evaluate the EIS/EIR and public comments, and will issue a  
14 Notice of Determination taking action on the application for a franchise agreement for a gen-tie  
15 within the County-controlled ROW.

## 16 **1.6 Issues to Be Addressed**

17 The environmental issues evaluated in this EIS/EIR include the physical, biological, cultural,  
18 socioeconomic, and other resources that have the potential to be affected by activities related to the  
19 Proposed Action and alternatives. This analysis includes an evaluation of impacts to the following  
20 resources:

- 21 • Aesthetics (NEPA and CEQA)
- 22 • Agricultural and Forest Resources (NEPA and CEQA)
- 23 • Air Quality (NEPA and CEQA)
- 24 • Airspace Management and Use (NEPA and CEQA)
- 25 • Biological Resources (NEPA and CEQA)
- 26 • Cultural and Paleontological Resources (NEPA and CEQA)
- 27 • Environmental Justice and Socioeconomics/Population and Housing (NEPA and CEQA)
- 28 • Geology, Minerals, and Soils (NEPA and CEQA)
- 29 • Greenhouse Gas Emissions (NEPA and CEQA)
- 30 • Hazards, Hazardous Materials, and Safety (NEPA and CEQA)
- 31 • Infrastructure and Utilities Service Systems (NEPA and CEQA)
- 32 • Land Use (NEPA and CEQA)
- 33 • Noise (NEPA and CEQA)
- 34 • Public Services (NEPA and CEQA)
- 35 • Transportation and Traffic (NEPA and CEQA)

- 1       • Hydrology and Water Quality (NEPA and CEQA)

2 In January 2018, the Governor’s Office of Planning and Research (OPR) submitted its proposal for  
3 the comprehensive updates to the CEQA Guidelines to the California Natural Resources Agency.  
4 Among OPR’s proposed Guideline amendments were those for analyzing transportation impacts  
5 pursuant to Senate Bill 743, proposed updates to the analysis of greenhouse gas emissions, and  
6 revised Section 15126.2(a) in response to the California Supreme Court’s decision in California  
7 Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th  
8 369.

9 Because this Draft EIS/EIR was substantially complete prior to implementation of the updated  
10 CEQA Guidelines, the Lead Agency evaluated this EIS/EIR against the revised CEQA Guidelines  
11 to verify consistency of the analyses presented in the EIS/EIR with the revised thresholds. This  
12 evaluation is presented in Appendix A7 of this EIS/EIR.

## 13 **1.7 Public Participation, Coordination, and Permitting**

14 Section 1.7 discusses how the EIS/EIR process will proceed, including a discussion of public  
15 participation opportunities throughout the process, interagency consultation and coordination, and  
16 project permitting.

### 17 **1.7.1 Public Participation**

18 Public participation is a dynamic process that continues throughout the preparation of an EIS/EIR.  
19 Scoping for the project was initiated with the publication of the Notice of Intent (NOI) in the  
20 Federal Register and Notice of Preparation (NOP) on November 27, 2017. Edwards AFB and Kern  
21 County held a scoping meeting after the publication of the NOI and NOP to formally solicit public  
22 and agency input on issues to be addressed in the EIS/EIR. In addition, the Air Force and the County  
23 have coordinated with affected local, state, and federal agencies on issues of concern. Public and  
24 agency comments are also being sought on the information, analysis, and conclusions presented in  
25 this EIS/EIR. The results of the scoping process are summarized below.

### 26 **1.7.2 Scoping Requirements**

27 Scoping is required by NEPA and CEQA regulations. The process ensures that significant issues,  
28 alternatives, and impacts are addressed in environmental documents and determines the degree to  
29 which these issues and impacts will be analyzed in the EIS/EIR.

#### 30 **1.7.2.1 Scoping Process**

31 The scoping process for the Edwards AFB Solar Project EIS/EIR included the following:

- 32       • Publishing the NOP and NOI to prepare an EIS/EIR;  
33       • Conducting public scoping meetings; and  
34       • Documenting all public and agency comments received for the proposed project in a  
35       Public Scoping Report.

1 Each of these components is discussed below.

2 ***NOP and NOI***

3 As required by CEQA Guidelines Section 15082 (14 CCR 15000 et seq.), the County issued an NOP  
4 on November 27, 2017, that summarized the proposed project, stated the County’s intention to  
5 prepare a joint EIS/EIR with the Air Force, and requested comments from interested parties.

6 To comply with NEPA (40 CFR 1501.7), the Air Force published the NOI in the Federal Register to  
7 prepare a joint EIS/EIR for the project (FR Vol. 82, No. 226, page 56009, November 27, 2017). The  
8 NOI serves as the official legal notice that a federal agency is commencing preparation of an EIS. The  
9 Federal Register serves as the U.S. Government’s official noticing and reporting publication. The NOI  
10 initiates the public scoping period for the EIS, provides information about the proposed project, and  
11 serves as an invitation for other federal agencies granted cooperating agency status to provide  
12 comments on the scope and content of the EIS. As part of scoping, the USAF informed the public and  
13 appropriate agencies the Proposed Action would occur within floodplain areas as required by EO  
14 11988, Floodplain Management, and EO 11990, Protection of Wetlands. Comments received during  
15 the 2017 scoping period have been considered by the USAF, and are addressed accordingly in the  
16 analysis presented in this EIS/EIR.

17 The NOP/NOI was filed with the State Clearinghouse and distributed to federal, state, regional, and  
18 local agencies and organizations; school districts; local libraries; Native American groups; and  
19 private firms and individuals. The public notice ran in the local newspaper and was sent to the  
20 general distribution list of all those identified as property owners within a 5-mile radius of the  
21 project site. The NOP was made available to the public on Kern County’s website at:  
22 [http://www.co.kern.ca.us/planning/pdfs/notices/EAFB\\_solar\\_nop.pdf](http://www.co.kern.ca.us/planning/pdfs/notices/EAFB_solar_nop.pdf), to all identified property  
23 owners within a 1,000 foot radius of the project site and to any parties of concern.

24 The comment period for the NOP and NOI ended on December 27, 2017.

25 ***Public Scoping Meeting***

26 During the NOP/NOI comment period, the County and Air Force held a public scoping meeting.  
27 The scoping meeting provided government agencies and the public the opportunity to receive  
28 information on the CEQA/NEPA process and on the project and to provide verbal and written  
29 comments. The County and Air Force held a public scoping meeting on December 12, 2017, at the  
30 Mojave Veterans Hall located at 15580 O Street in Mojave, California. Approximately 30 people  
31 attended the public scoping meeting, including representatives from local organizations and private  
32 citizens. Ten members of the public provided spoken comments at the meeting.

33 As a result of public comments received during the scoping process, the Developer revised the  
34 project design to remove gen-tie route option, specifically North-South-Gen-Tie Route Option 3 as  
35 shown on Figure 2 of Initial Study/NOP and to include crossing Option C, which is presented in  
36 Section 2.3.2.2 and shown in Figure 2-4 of this EIS/EIR.

## 1 **Scoping Report**

2 The scoping comment period ended on December 27, 2017. In total, 13 comment letters were  
3 received: 12 from federal, state, and local agencies and organizations and 1 from individuals. These  
4 comments are incorporated into the EIS/EIR project record and are documented and summarized  
5 in a scoping report prepared in January 2018. The scoping report contained information received  
6 during the public scoping comment period. Comments received during the scoping period were  
7 grouped into the following categories:

- 8 1. Project Description
- 9 2. Air Quality
- 10 3. Biological Resources
- 11 4. Cultural Resources
- 12 5. Hazards
- 13 6. Land Use
- 14 7. Public Services
- 15 8. Traffic
- 16 9. Water Resources
- 17 10. Indirect and Cumulative Impacts
- 18 11. Project Alternatives

### 19 **1.7.3 Public Comment Process**

20 Air Force EIAP and CEQA require the lead agency to provide the public with a full disclosure of  
21 the expected environmental consequences of a proposed project, as well as the opportunity to  
22 provide comments. Therefore, the Air Force and County provided the public with a 30-day scoping  
23 window to review and comment on the proposal. This 30-day public scoping period was announced  
24 in the Federal Register and in local newspapers on November 27, 2017. The County and Air Force  
25 held one public scoping meeting (meeting details are provided in Section 1.7.2.1 above). Public  
26 comments were used to assist in the shaping and modification of project alternatives evaluated in  
27 the analysis.

28 This Draft EIS/EIR is being distributed directly to agencies, organizations, and interested  
29 groups and persons for comment during a 45-day formal public review period in accordance with  
30 32 CFR Section 989.19(c) of EIAP and Section 15105 of the CEQA Guidelines. The Draft EIS/EIR,  
31 including all supporting studies, is available for review during normal business hours at the Kern  
32 County Planning and Natural Resources Department, located at:

33 Kern County Planning and Natural Resources Department  
34 2700 "M" Street, Suite 100  
35 Bakersfield, CA 93301-2370  
36 Phone: (661) 862-8600, Fax: (661) 862-8601  
37 <https://kernplanning.com/planning/environmental-documents/>

1 and also at the following libraries:

2 Kern County Library – Rosamond Branch  
3 3611 Rosamond Boulevard  
4 Rosamond, CA 93560  
5 Phone: (661) 256-3236  
6

7 Kern County Library – Mojave Branch  
8 15555 O Street  
9 Mojave, CA 93501  
10 Phone: (661) 824-2243  
11

12 Kern County Library – California City Branch  
13 9507 California City Boulevard  
14 California City, CA 93505  
15 Phone: (760) 373-4757  
16

17 Los Angeles County Library – Lancaster Branch  
18 601 W Lancaster Boulevard  
19 Lancaster, CA 93534  
20 Phone: (661) 948-5029  
21

22 The Air Force and Kern County have also made the Draft EIS/EIR available for download at:

23 <https://kernplanning.com/planning/environmental-documents/>

24 A Notice of Availability (NOA) for the Draft EIS/EIR will be published in the Federal Register  
25 with announcements made in the Antelope Valley Press, the [Mojave Newspaper], and the  
26 [Rosamond Newspaper] initiating the 45-day public comment period. Written comments may be  
27 submitted to either the Edwards AFB Public Affairs Office or the Kern County contact below:

28 U.S. Post: Gary Hatch, Environmental, Public Affairs  
29 Bldg. 1405 Room 400  
30 Edwards Air Force Base, CA 93524  
31 Phone: (661) 277-8707  
32 Fax: (661) 277-2732  
33 Email: 412tw.pae@edwards.af.mil

34 or

35 U.S. Post: Kern County Planning and Natural Resources Department  
36 Attn: Janice Mayes  
37 2700 “M” Street, Suite 100  
38 Bakersfield, CA 93301  
39 Phone: (661) 862-8793  
40 Email: MayesJ@kerncounty.com

41 During the 45-day comment period the Air Force will conduct public hearings. The time and  
42 location of the hearings will be announced in the Antelope Valley Press, the [Mojave Newspaper],

1 and the [Rosamond Newspaper]. The Air Force and County will review and respond to comments  
2 on this Draft EIS/EIR and modify analysis as necessary before publishing the Final EIS/EIR for  
3 public review.

### 4 **1.7.3.1 NEPA**

5 An NOA for the Final EIS/EIR will be announced in the Federal Register as well as in the Antelope  
6 Valley Press, the [Mojave Newspaper], and the [Rosamond Newspaper]. The Air Force will not  
7 issue a ROD until a minimum of 30 days has passed from the time the publication of the Final  
8 EIS/EIR is announced.

9 Once a minimum of 30 days has passed and all information and public comments have been  
10 reviewed, the Air Force will publish a Notice of Availability for the ROD in the Federal Register  
11 as well as in the Antelope Valley Press, the [Mojave Newspaper], and the [Rosamond Newspaper].  
12 The NOA will announce the Air Force decision regarding the Proposed Action.

### 13 **1.7.3.2 CEQA**

14 After responses to public comments have been developed by the Air Force and County, and an  
15 ROD has been issued by the Air Force, a public hearing will be held by the Board of Supervisors  
16 to render a decision on the application for a franchise agreement.

## 17 **1.7.4 Interagency Consultation and Coordination**

18 This section describes coordination between the NEPA and CEQA lead agencies and other federal,  
19 state, and regional agencies with regulatory authority over aspects of the project.

### 20 **1.7.4.1 U.S. Army Corps of Engineers**

21 The U.S. Army Corps of Engineers (USACE) has the responsibility to protect aquatic ecosystems,  
22 including water quality and wetland resources under Section 404 of the Clean Water Act. Under  
23 that authority, the USACE regulates the discharge of dredged or fill material into waters of the  
24 United States, including wetlands, by reviewing proposed projects to determine whether they may  
25 impact such resources and, thereby, are subject to Section 404's permit requirements. An approved  
26 jurisdictional determination was issued by USACE for the Sunlight Partners Solar Array Project  
27 on June 7, 2013 (USACE, 2013) and is included as Appendix B17 to this EIS/EIR. USACE  
28 considered and evaluated potential jurisdictional waters and/or wetlands within the review area and  
29 determined that these waters do not have wetlands and/or jurisdictional wetlands or waters. The  
30 review area included the Antelope Valley Watershed, excluding the areas of Lake Palmdale and all  
31 waters tributary to Rosamond, buckhorn, and Rogers Lakes, and Lake Palmdale. This review area  
32 evaluated by USACE in 2013 encompassed the proposed solar facility site on Edwards AFB and  
33 the proposed gen-tie line route options within Kern County. Thus, the proposed solar facility site  
34 on Edwards AFB and the gen-tie line route options within Kern County are located in an area that  
35 has been determined by the USACE to be an area where there are not any wetlands and/or  
36 jurisdictional wetlands or waters. At this time, a Section 404 permit would not be required  
37 (USACE, 2013).

1 **1.7.4.2 California Department of Fish and Wildlife**

2 The California Fish and Game Code (Section 1602) requires an entity to notify the California  
3 Department of Fish and Wildlife (CDFW) of any proposed activity that may:

- 4 • Substantially divert or obstruct the natural flow of any river, stream or lake.
- 5 • Substantially change or use any material from the bed, channel, or bank of, any river,  
6 stream, or lake.
- 7 • Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or  
8 ground pavement where it may pass into any river, stream, or lake.

9 The notification requirement applies to any work undertaken in or near a river, stream, or lake that  
10 flows at least intermittently through a bed or channel. This includes ephemeral streams, desert  
11 washes, and watercourses with a subsurface flow. If CDFW determines that the solar development  
12 activities may substantially adversely affect fish and wildlife resources, a Streambed Alteration  
13 Agreement will need to be prepared. A jurisdictional delineation of waters of the state was  
14 conducted on 3,032 acres of the biological resources study area. In the remainder of the study area,  
15 a map-based analysis of potentially jurisdictional waters was conducted (Dudek, 2018b).  
16 Additionally, a jurisdictional delineation of waters of the state was conducted along the gen-tie  
17 (Dudek, 2018a). A review of streambeds within the EUL Study Area was prepared in 2011 (URS,  
18 2011); however, delineations have not been completed in either the on-base review area or gen-tie  
19 study area. This document would be used to complete a Streambed Alteration Agreement under  
20 Section 1602 of the California Fish and Game Code.

21 **1.7.4.3 California Department of Transportation**

22 The California Department of Transportation (Caltrans) has jurisdiction over encroachments to  
23 Caltrans facilities and related easements and ROWs. During construction, the proposed project  
24 would require the delivery of heavy construction equipment and PV solar components using area  
25 roadways, some of which may require transport by oversize vehicles. The need for and number of  
26 escorts, California Highway Patrol escorts, as well as the timing of transport, would be at the  
27 discretion of Caltrans and Kern County, and would be detailed in respective oversize load permits.

28 **1.7.4.4 Eastern Kern Air Pollution Control District**

29 The project is located within the jurisdiction of the Eastern Kern Air Pollution Control District  
30 (EKAPCD), which reviews the plans and specifications for construction in the project area. The  
31 EKAPCD would assess emissions and possible air contamination resulting from construction and  
32 operational activities (e.g., road dust, windblown contaminants, and emissions from construction  
33 activities).

34 **1.7.4.5 Regional Water Quality Control Board**

35 Under Section 401 of the Clean Water Act, the Regional Water Quality Control Board (RWQCB)  
36 must certify that actions receiving authorization under Section 404 of the Clean Water Act also  
37 meet state water quality standards. The RWQCB also regulates waters of the state under the Porter-  
38 Cologne Act Water Quality Control Act (Porter Cologne Act). The RWQCB requires projects to  
39 avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland

1 acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory  
 2 mitigation for impacts to wetlands and/or waters of the state. The RWQCB also has jurisdiction  
 3 over waters deemed “isolated” or not subject to Section 404 jurisdiction. Dredging, filling, or  
 4 excavation of isolated waters constitutes a discharge of waste to waters of the state, and prospective  
 5 dischargers are required obtain authorization through an Order of Waste Discharge or waiver  
 6 thereof from the RWQCB and comply with other requirements of the Porter-Cologne Act. This  
 7 document would be used to complete permitting under the Porter-Cologne Act by the RWQCB.

## 8 **1.7.5 Consultation Processes for ESA Section 7, NHPAs**

### 9 **1.7.5.1 ESA Section 7 Compliance**

10 The U.S. Fish and Wildlife Service (USFWS) has jurisdiction to protect threatened and endangered  
 11 species under the Endangered Species Act (ESA) [16 USC Section 1531 et seq.]. Formal  
 12 consultation with USFWS under Section 7 of the ESA is required for any federal action that may  
 13 adversely affect a federally listed species. On February 22, 2008, the Air Force requested formal  
 14 consultation with USFWS pursuant to Section 7 of the ESA for predicted base-wide activities at  
 15 Edwards AFB regarding the effects of federally threatened desert tortoise (*Gopherus agassizii*). On  
 16 March 11, 2014, USFWS issued the Biological Opinion (BO) for Operations and Activities at  
 17 Edwards Air Force Base, California. The proposed project was included among the base-wide  
 18 activities assessed in the BO.

### 19 **1.7.5.2 NHPA Section 106 Compliance and Tribal Consultation**

20 Federal agencies must demonstrate compliance with the National Historic Preservation Act  
 21 (NHPA) of 1966, as amended (16 USC 470, et seq.). Section 106 of the NHPA requires a federal  
 22 agency with jurisdiction over a project to evaluate the effect of the proposed project on properties  
 23 listed in, or eligible for listing in, the National Register of Historic Places (NRHP). Federal agencies  
 24 must also provide the Advisory Council on Historic Preservation (ACHP) an opportunity to  
 25 comment on the effects of the proposed project to those properties.

26 A literature review, records searches, and cultural resources surveys has been completed to identify  
 27 historic properties within the project Area of Potential Effect (APE). A Native American Heritage  
 28 Commission (NAHC) Sacred Lands File search was also completed, which included a list of  
 29 individuals and groups indicated by the NAHC as having affiliation with the project APE and whom  
 30 the NAHC recommends that the Developer consult regarding the project and potential effects to  
 31 Native American cultural resources and sacred sites. Edwards AFB initiated Section 106  
 32 consultation with these individuals and groups to ensure that Native American resources and places  
 33 of traditional cultural or religious concern are taken into account.

34 Edwards AFB consults with federally recognized Tribes on a government-to-government basis in  
 35 accordance with several authorities including NEPA, the NHPA, the American Indian Religious  
 36 Freedom Act, and EO 13007. Under Section 106 of the NHPA, the Air Force consults with federally  
 37 recognized Tribes as part of its responsibilities to identify, evaluate, and resolve adverse effects on  
 38 historic properties important to these tribal communities that may be affected by Edwards AFB’s  
 39 undertakings. Section 3.6 includes discussion of Edwards AFB Tribal consultation on the Proposed  
 40 Action.

1 **1.7.5.3 Assembly Bill 52 Compliance and Tribal Consultation**

2 The consultation conducted by the County under AB 52 pertains to the CEQA component of the  
3 project, and specifically the gen-tie route options. On November 27, 2017, the County mailed  
4 AB 52 consultation notification letters to Native American groups and individuals identified on the  
5 County’s AB 52 consultation list via certified mail. The contact list included four tribal  
6 representatives from three tribes: Torres Martinez Desert Cahuilla Indians, San Manuel Band of  
7 Mission Indians, and Twenty-Nine Palms Band of Mission Indians. The notification letter provided  
8 details on the project, a map of the project site, and an invitation to consult.

9 On December 13, 2017, Ms. Jessica Mauck, Cultural Analyst with the San Manuel Band of  
10 Missions Indians, responded by email stating that the project lies within Serrano ancestral territory  
11 and is therefore of interest to the Tribe. The email also notes that the San Manuel Band of Mission  
12 Indians is already consulting with Edwards AFB for the portion of the project within the base, and  
13 therefore also elects to consult under CEQA with the County. The Tribe requested copies of the  
14 cultural resources technical reports for the gen-tie route options for review. On December 18, 2017,  
15 the County submitted the gen-tie route options cultural resources report to the Tribe.

16 On January 18, 2018, Mr. Anthony Madrigal, Jr., Tribal Historic Preservation Officer (THPO) with  
17 the Twenty-Nine Palms Band of Mission Indians, replied by letter stating that while the THPO is  
18 not aware of any resources within the project area that pertain to the Twenty-Nine Palms Band of  
19 Mission Indians, the project may have the potential to significantly impact resources of concern to  
20 the Tribe. The Tribe further requested that they be allowed to review the cultural resources technical  
21 reports for the project and be informed of the distribution of the EIS/EIR. The County submitted  
22 the cultural resources technical reports to the Tribe on January 30, 2018.

23 Consultation with the San Manuel Band of Mission Indians and Twenty-Nine Palms Band of  
24 Mission Indians is ongoing.

25 **1.7.6 Responsible and Trustee Agencies (CEQA)**

26 Projects or actions undertaken by the County, as the CEQA lead agency, may require subsequent  
27 oversight, approvals, or permits from other public agencies in order to be implemented. The County  
28 and the Air Force are coordinating with the following state and local agencies as part of this  
29 environmental planning process.

30 **1.7.6.1 State Agencies**

- 31 • State Lands Commission
- 32 • California Department of Fish and Wildlife
- 33 • California Office of Historic Preservation
- 34 • California Air Resources Board
- 35 • California Department of Transportation
- 36 • Regional Water Quality Control Board – Lahontan Region
- 37 • California Public Utilities Commission
- 38 • State Water Resources Control Board

### 1 1.7.6.2 Local Agencies

- 2 • Eastern Kern Air Pollution Control District
- 3 • Kern County Environmental Health Services Department
- 4 • Kern County Roads Department
- 5 • Kern County Fire Department

## 6 1.8 Permitting Requirements

7 The project would be required to obtain a number of special permits before construction or solar  
 8 energy field operation may proceed. It would be the responsibility of the Developer to obtain the  
 9 permits required for construction, operation, and maintenance of the proposed EUL facility.  
 10 Potential permits and approvals that may be required for this project are listed below.

- 11 • **Franchise Agreement:** The Developer is responsible for obtaining a Franchise Agreement  
 12 with Kern County to utilize County franchise rights for routing the gen-tie line from the  
 13 project area to the Windhub Substation and/or Westwind Substation.
- 14 • **Air Force Outgrants:** The Developer shall obtain one or more leases and non-exclusive  
 15 easements as authorized by 10 USC 2667 and 10 USC 2668; and executed in accordance  
 16 with Air Force Instruction 32-9003, Granting Temporary use of Air Force Real Property.
- 17 • **Encroachment Permit:** The Developer is responsible for obtaining an Encroachment  
 18 Permit from Caltrans for encroachment into the State Route (SR) 14 ROW.
- 19 • **State Lands Commission Permit:** The Developer is responsible for obtaining a State  
 20 Lands Commission Permit for a portion of the gen-tie line that would cross state lands.
- 21 • **Easement by Ordinance:** The Developer must obtain an easement to cross the Los  
 22 Angeles Department of Water and Power's 230 kV and 500 MW transmission lines.
- 23 • **Easement from Los Angeles Department of Water and Power:** The Developer is  
 24 responsible for obtaining an easement to cross the Los Angeles aqueduct.
- 25 • **Air Force's Section 7 Consultation:** The Air Force is responsible for consulting with the  
 26 USFWS pursuant to Section 7 of the federal ESA.
- 27 • **Air Force's Section 106 Consultation:** The Air Force is responsible for consulting with  
 28 federally recognized tribes and SHPO pursuant to Section 107 of the NHPA.
- 29 • **Determination of No Hazard to Air Navigation:** The Developer is responsible for  
 30 obtaining a determination of No Hazard to Air Navigation from the Federal Aviation  
 31 Administration.
- 32 • **Incidental Take Permit:** The Developer is responsible for obtaining an incidental take  
 33 permit pursuant to Section 2081 of the California ESA if take of state-listed species is  
 34 required. The Air Force is responsible for obtaining an incidental take permit for federally  
 35 listed species.
- 36 • **Streambed Alteration Agreement:** The Developer is responsible for obtaining a  
 37 Streambed Alteration Agreement pursuant to Sections 1600–1603 of the California Fish  
 38 and Game Code.

- 1 • **Waste Discharge Requirements:** The Developer is responsible for complying with waste  
2 discharge requirements pursuant to the California Water Code with the Lahontan RWQCB.
- 3 • **Railroad Encroachment Permit:** The Developer is responsible obtaining a permit for a  
4 new wireline crossing/encroachment over multiple Union Pacific Railroad railways.
- 5 • **Eastern Kern Air Pollution Control District Permit:** The Developer is responsible for  
6 obtaining a permit to Construct/Operate from the EKAPCD.
- 7 • **Road Encroachment Permit:** The Developer is responsible for obtaining an  
8 encroachment permit from the Kern County Roads Department to enter the road’s ROW.
- 9 • **NPDES General Permit:** The Developer is responsible for obtaining a permit for Storm  
10 Water Discharges Associated with Construction Activities from the Lahontan RWQCB.
- 11 • **Air Force Notice to Proceed:** The Developer shall obtain a Notice to Proceed from the  
12 Air Force Civil Engineer Center, Installations Director or his/her delegated authority prior  
13 to undertaking any demolition or construction work on the Air Force outgrant premises.
- 14 • **Grading and Building Permits:** The Developer is responsible for obtaining grading and  
15 building permits from Kern County.
- 16 • **Septic Systems Permit:** The Developer is responsible for obtaining a permit for any  
17 proposed septic systems from Kern County Environmental Health Services Department.
- 18 • **Air Force Form 103:** The Developer is responsible for obtaining an Air Force Form 103,  
19 Dig Permit, from Edwards AFB.
- 20 • **Well Abandonment Approval:** The Developer is responsible for obtaining a well  
21 abandonment approval from the RWQCB and Edwards AFB.

## 22 **1.9 Related Documents Incorporated by Reference**

23 This section discusses related plans and documents that are incorporated into this EIS/EIR process  
24 by reference. In accordance with 40 CFR Section 1506.3 of NEPA regulations and Section 15150  
25 of the CEQA Guidelines, to reduce the size of the EIS/EIR report, the following documents are  
26 hereby incorporated by reference and are available for public review at the Kern County Planning  
27 and Natural Resources Department. A brief synopsis of the scope and content of these documents  
28 is provided below.

- 29 • **Edwards Air Force Base Installation Development Plan:** The Edwards AFB Installation  
30 Development Plan, adopted in April 2012, supports the Air Force Test Center  
31 Commander’s priorities and goals for Edwards AFB. It serves as a guide for future  
32 development and provides general background information in land use growth patterns and  
33 provides a way to balance investments on the installations’ infrastructure.
- 34 • **Edwards Air Force Base Integrated Natural Resource Management Plan:** The  
35 Edwards AFB Integrated Natural Resource Management Plan serves as a guide for  
36 protecting the natural resources found on and in the vicinity of the base.
- 37 • **Edwards Air Force Base Integrated Cultural Resource Management Plan:** The  
38 Edwards AFB Integrated Cultural Resource Management Plan serves as a guide for  
39 protecting the cultural resources found on and in the vicinity of the base.

- 1       • **Kern County General Plan:** The Kern County General Plan is a policy document with  
2 land use maps and related information that are designed to give long-range guidance to  
3 County officials making decisions affecting the growth and resources of Kern County,  
4 excluding the metropolitan Bakersfield planning area. This document, adopted on June 14,  
5 2004, and last amended on September 22, 2009, helps to ensure that day-to-day decisions  
6 conform to the long-range program designed to protect and further the public interest as  
7 related to the County’s growth and development and mitigate environmental impacts.
- 8       • **Mojave Specific Plan:** The Mojave Specific Plan area is located along a stretch of SR 14,  
9 around the community of Mojave. The Mojave Specific Plan area encompasses nearly  
10 31,000 acres (50 square miles) in eastern Kern County in the Antelope Valley area. It  
11 addresses issues of importance in the planning area by stating goals, objectives, policies,  
12 and implementation measures to accommodate growth while protecting the community’s  
13 unique business, transportation, and environmental resources.
- 14       • **South of Mojave-Elephant Butte Specific Plan:** The South of Mojave-Elephant Butte  
15 Specific Plan was adopted in 1973 to guide development in the area south of Mojave.  
16 Specifically, the plan covers an area of approximately 9,300 acres to the north and south  
17 of Silver Queen Road, west of SR 14. The South of Mojave-Elephant Butte Specific Plan  
18 contains recommendations and implementation measures addressing housing, business,  
19 industry, open space, recreation, circulation, and other land uses within the plan area.
- 20       • **West Edwards Road Settlement Specific Plan:** The community of West Edwards Road  
21 Settlement is a Kern County unincorporated community located in the Antelope Valley  
22 area of the Mojave Desert. The plan area covers approximately 3,280 acres and is adjacent  
23 to and north of the Edwards AFB. It was designated a Specific Plan Required area because  
24 it is a recognizable small community that is too large to meet the “Rural Community”  
25 criteria of the Kern County General Plan. The Specific Plan was prepared and adopted in  
26 1992 to recognize existing development and prepare for project community growth.
- 27       • **Actis Interim Rural Community Plan:** The Actis Interim Rural Community Plan covers  
28 the area surrounding the intersection of Backus Road and SR 14, approximately 7 miles  
29 south of Mojave. Interim Rural Community Plans apply to rural community areas until the  
30 time that a formal Specific Plan is adopted for the community. Because no formal text plan  
31 has yet been adopted for the community of Actis, the goals and policies of the Kern County  
32 General Plan would be applicable to portions of the project that pass through the proposed  
33 project area.
- 34       • **Kern County Zoning Ordinance:** The County zoning ordinance was adopted to promote  
35 and protect the public health, safety, and welfare through the orderly regulation of land  
36 uses throughout the unincorporated area of the county. The zoning ordinance is intended  
37 to support orderly and planned use of land resources, encourage and guide development in  
38 a manner consistent with the Kern County General Plan and regulate structures, yard  
39 configuration, population density, land use, and other facets of county development.
- 40       • **Kern County Airport Land Use Compatibility Plan:** The Kern County Airport Land  
41 Use Compatibility Plan (ALUCP) was originally adopted in 1996 and has since been  
42 amended to comply with Aeronautics Law and Public Utilities regarding public airports  
43 and surrounding land use planning. As required by that law, proposals for public or private  
44 land use developments that occur within defined airport influence areas are subject to  
45 compatibility review. The principle airport land use compatibility concerns addressed by  
46 the plan are: (1) exposure to aircraft noise, (2) land use safety with respect to both people  
47 and property on the ground and the occupants of aircraft, (3) protection of airport air space,

1 and (4) general concerns related to aircraft overflights. The ALUCP identifies policies and  
2 compatibility criteria for influence zones or planning area boundaries.

- 3 • **Kern County Housing Element:** The development and preservation of adequate and  
4 affordable housing is important to the well-being of the residents and the economic  
5 prosperity of the county. To plan for the development of adequate housing for all income  
6 segments, a housing element was prepared as a part of the Kern County General Plan. This  
7 document specifically addresses housing needs and resources in the County’s  
8 unincorporated areas. This Housing Element must maintain consistency with the other  
9 elements of the Kern County General Plan.

## 10 **1.10 Implementation, Monitoring, and Enforcement**

### 11 **1.10.1 Implementation**

12 The lead agencies will continue to involve and collaborate with the public during project  
13 implementation if the project is approved. Opportunities to become involved during  
14 implementation and monitoring could include development of partnerships and community-based  
15 citizen working groups. Citizens and user groups within the vicinity of the project are invited to  
16 become actively involved in implementation, monitoring, and enforcement of decisions. The Lead  
17 Agencies and citizens could collaboratively develop site-specific goals and objectives that mutually  
18 benefit public land resources, local communities, and the people who live, work, or play on the  
19 public lands.

### 20 **1.10.2 Monitoring**

21 The lead agencies would monitor activities under their jurisdiction throughout the life of the project  
22 to ensure that decisions are implemented in accordance with the approved ROD and EUL grant,  
23 and County Franchise Agreement. Monitoring would be conducted to determine whether decisions,  
24 best management practices (BMPs), and approved mitigation measures are achieving the desired  
25 effects. Effectiveness monitoring would provide an empirical data base on impacts of decisions and  
26 effectiveness of mitigation. Effectiveness monitoring also would be useful for improving analytical  
27 procedures for future impact analyses and for designing or improving mitigation and enhancement  
28 measures.

### 29 **1.10.3 Enforcement and Adaptive Management**

30 The Air Force as NEPA Lead Agency will incorporate adaptive management into mitigation for  
31 the solar facility portion of the project. Adaptive management is a system of management practices  
32 based on clearly identified outcomes, monitoring to determine whether management actions are  
33 meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes  
34 are met or to re-evaluate the outcomes. This system is in effect developing an adaptive process as  
35 an implementation tool that goes beyond the traditional “predict-mitigate-implement” model and  
36 incorporates the “predict-mitigate-implement-monitor-adapt” adaptive management model. Put  
37 another way, adaptive management is a system of management practices based on clearly identified  
38 outcomes, monitoring to determine whether management actions are meeting outcomes, and, if not,  
39 facilitating management changes that will best ensure that outcomes are met or to re-evaluate the

1 outcomes. Adaptive management has been incorporated into the mitigation measures adopted for  
2 the Proposed Action. Procedures include:

- 3 • Determining environmental effects of a project and identifying mitigation needs along with  
4 other permitting and regulatory requirements. Analysis should indicate where data are  
5 lacking and uncertainty exists with respect to the intended outcomes and the significance  
6 of this lack (see 40 CFR Section 1502.22).
- 7 • Monitoring designed for adaptive management must be able to result in appropriate  
8 adjustments in project activities as the project is constructed and planned mitigation is  
9 installed.
- 10 • Striving to ensure public input into and understanding of the principles of adaptive  
11 management.
- 12 • Maintaining open channels of information to the public and affected regulatory and  
13 permitting agencies during the application of adaptive management, including  
14 transparency of the monitoring process that precedes adaptive management and the  
15 decision-making process that implements it. This involves: (a) identifying indicators of  
16 change, (b) assessing monitoring activities for accuracy and usefulness, and (c) making  
17 changes in tactics, activities and/or strategies.
- 18 • Providing post-activity opportunity for public and affected outside agency review of  
19 adaptive management practices, including practices that were exceptions to any resource  
20 management plans or that had permitting and other regulatory requirements not satisfied  
21 by prior coordination.

22 Adaptive management allows agencies, in their environmental reviews, to establish and analyze  
23 mitigation measures that are projected to result in the desired environmental outcomes and to  
24 identify those mitigation principles or measures that it would apply in the event the initial mitigation  
25 commitments are not implemented or effective.

## 26 1.11 Document Organization

27 The Draft EIS/EIR is organized as follows:

28 **Executive Summary** provides a brief summary of the Proposed Action and feasible and reasonable  
29 alternatives as well as a description of the affected environment and environmental consequences  
30 of implementing the Proposed Action.

31 **Chapter 1** provides general background on the project. It identifies the purpose and need for action;  
32 project objectives; roles of Air Force, County and other agencies, and authorities regulating various  
33 aspects of the project. It also provides a summary of the public involvement process for the project.

34 **Chapter 2** describes the Proposed Action and decisions to be made and the alternatives selection  
35 criteria for the project. It also presents a range of reasonable project alternatives that address the  
36 stated purpose and need and identifies and explains why alternatives were considered but not  
37 carried forward for detailed analysis. This chapter also identifies the Air Force's preferred  
38 alternative.

- 1 **Chapter 3** describes the affected environment (existing conditions) for various environmental  
2 components in the Proposed Action and provides a comprehensive analysis and assessment of the  
3 direct and indirect environmental consequences and impacts of the Proposed Action and NEPA  
4 alternatives.
- 5 **Chapter 4** provides analysis of CEQA alternatives, a comparison of the differences in impacts  
6 among the project alternatives, and identification of the environmentally superior alternative.
- 7 **Chapter 5** provides a discussion of the consequences of project implementation and other NEPA  
8 and CEQA statutory requirements, including environmental effects found to be less than  
9 significant, significant environmental effects that cannot be avoided, irreversible impacts of project  
10 implementation, significant cumulative impacts and growth inducement.
- 11 **Chapter 6** includes a list of organizations and persons consulted on the Draft EIS/EIR.
- 12 **Chapter 7** is reserved for responses to comments on the Draft EIS/EIR.
- 13 **Chapter 8** includes list of acronyms and abbreviations used in the Draft EIS/EIR.
- 14 **Chapter 9** includes a list of the preparers of the Draft EIS/EIR.
- 15 **Chapter 10** provides a list of references used in the Draft EIS/EIR.
- 16 **Chapter 11** provides an index of terms used in the Draft EIS/EIR.
- 17 **Appendices**

# 1 CHAPTER 2

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## 2 Proposed Action, Project Description, and 3 Alternatives

### 4 2.1 Introduction

5 This EIS/EIR chapter provides a description of the construction, operation, and maintenance of a  
6 solar photovoltaic (PV) renewable energy project (proposed project, or Proposed Action) at  
7 Edwards Air Force Base (AFB) and those supporting actions the U.S. Air Force (USAF, or Air  
8 Force) and County would undertake to implement the Proposed Action. This chapter also provides  
9 a description of alternatives that meet Air Force and County requirements for the Proposed Action  
10 and sets forth by the selection standards that were used to evaluate and develop reasonable  
11 alternatives. Alternatives that were considered but did not meet the selection standards are included  
12 but are eliminated from further evaluation.

### 13 2.2 Description of the Proposed Action

14 The Air Force Proposed Action is to lease land to a developer for the construction, operation, and  
15 maintenance of the Edwards AFB Solar Project a solar PV renewable energy project and associated  
16 230-kilovolt (kV) generation-tie (gen-tie) line (i.e., the proposed project or Proposed Action) at  
17 Edwards AFB. The final scale of the Proposed Action is anticipated to be up to 750 megawatts  
18 (MW), with the generated energy distributed to investor-owned utilities, municipalities and other  
19 energy off-takers. The construction scale of such a proposed project would require a lease and  
20 development of up to 4,000 acres of non-excess land at Edwards AFB. It should be noted that the  
21 study area evaluated in this Environmental Impact Statement (EIS)/Environmental Impact Report  
22 (EIR) included 5,800 acres. Through the siting and initial design process, the Air Force was able to  
23 minimize impacts to environmentally sensitive areas.

24 The Proposed Action would occur in three phases. Phase one actions would include the construction  
25 of renewable energy solar arrays and electrical interconnection lines and the infrastructure  
26 necessary to connect to the grid. Once these are constructed and installed, phase two actions would  
27 include the operation and maintenance of Proposed Action facilities. The third and final phase  
28 would occur at the expiration of the lease term, which is projected to reasonably expire at the end  
29 of the useful life of the proposed project infrastructure, not to exceed 35 years. At the end of its  
30 useful life, the solar facility on the leased Air Force land would be decommissioned and the land  
31 returned to the Air Force for another land use. Detailed provisions concerning the construction,  
32 operation, maintenance, and generalized decommissioning actions of the solar PV system,  
33 including environmental management and mitigation measures, would be addressed in the lease  
34 agreement. The proposed lease, once implemented, would be in place through all project phases

1 and the elements of environmental management, mitigation, and best management practices would  
2 occur during project phases, as appropriate. Any significant or major changes in the project  
3 activities analyzed in this EIS/EIR may require additional National Environmental Policy Act  
4 (NEPA) considerations, including supplemental environmental analysis under the Air Force’s  
5 Environmental Impact Analysis Process (EIAP) and California Environmental Quality Act  
6 (CEQA) regulations.

7 A Franchise Agreement with the County would be required to use County franchise rights for  
8 routing of a 230 kV gen-tie line from the proposed solar facility to a point of interconnection where  
9 power generated by the project can be delivered to the grid. Points of interconnection may include  
10 the Southern California Edison (SCE) Windhub Substation and/or the privately owned Westwind  
11 Substation. The gen-tie line would allow electricity generated from the project to reach high-  
12 voltage transmission lines that would be able to carry power to utility customers. The proposed 230  
13 kV gen-tie line would run across publicly and privately owned property within Kern County. The  
14 final gen-tie route will be determined by the ability to acquire access easements for construction  
15 and installation of the line from public and private entities.

## 16 **2.3 Environmental Setting**

### 17 **2.3.1 Regional Setting**

18 The proposed solar facility would be located on the northwest corner of Edwards AFB. The project  
19 site is located approximately 57 miles southeast of the city of Bakersfield and approximately 7  
20 miles north of the community of Rosamond and 6 miles south of Mojave, in southeastern Kern  
21 County, California (see **Figure 2-1**). Kern County is California’s third-largest county in land area,  
22 encompassing 8,161 square miles. Kern County is bounded by Kings, Tulare, and Inyo Counties  
23 on the north, San Bernardino County on the east, Los Angeles and Ventura Counties on the south,  
24 and Santa Barbara and San Luis Obispo Counties on the west. Kern County consists of three general  
25 areas, or “regions”: Valley Region, Mountain Region, and Desert Region. Kern County  
26 encompasses over 5 million acres within these diverse geographical regions. The project site is  
27 located in the Desert Region. The proposed project is located in the western portion of the Mojave  
28 Desert, in the Antelope Valley area. The Mojave Desert is to the south and east of several low  
29 mountain ranges and is dominated by desert vegetation. Topography is mostly flat, but elevations  
30 gradually rise toward the west and northwest. The Tehachapi Mountains are to the north and west  
31 and the San Gabriel Mountains to the south.

32 The major north–south route in the region is State Route (SR) 14, which is located approximately  
33 1.1 miles west of the project. SR 14 is a four-lane highway that runs north–south between Santa  
34 Clarita (Los Angeles County) and Inyokern (Kern County), terminating at U.S. Highway 395. The  
35 major east-west route near the project is SR 58, which is located approximately 5 miles north of  
36 the project. SR 58 is a four-lane highway that runs between US 101 near Santa Margarita (San Luis  
37 Obispo County) and Interstate 15 (I-15) near Barstow (San Bernardino County) and is a primary  
38 truck route for long-haul vehicles transporting goods between California and areas in the east.

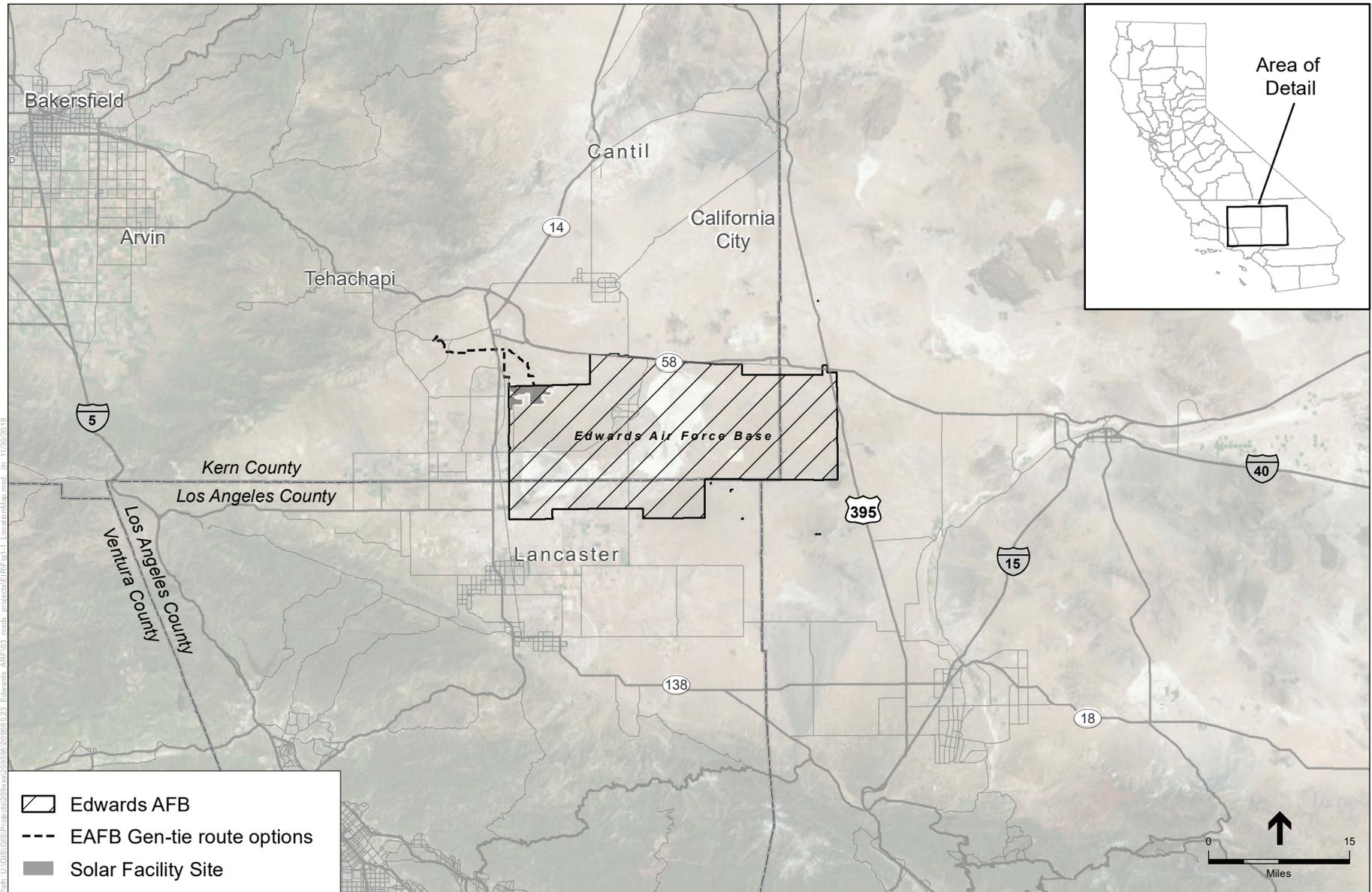


Figure 2-1: PROJECT VICINITY

1 The unincorporated community of Rosamond is located to the west of the proposed solar facility  
2 along SR 14 in the southern end of the Antelope Valley, near the border with Los Angeles County.  
3 The unincorporated community of Mojave is located along SR 14, northwest of the proposed  
4 project.

5 Land uses in the region include a mix of vacant land; agriculture; low-density, single-family  
6 residential uses; recreational and public facilities; and nature preserves. Urban development is  
7 concentrated in Rosamond and Mojave. There are no designated scenic highways, views, vistas, or  
8 points within the viewshed of the proposed solar facility site. Renewable energy generation is a  
9 significant and growing land use in the desert region, with tens of thousands of acres of wind and  
10 solar power plants currently operating, under construction, or planned in the vicinity of the  
11 proposed project. The base of the Tehachapi Mountain range is approximately 12 miles to the  
12 northwest.

13 The solar project facility and gen-tie routes would be served by the Kern County Sheriff's  
14 Department (KCSO) for law enforcement and public safety. The closest KCSO Sheriff station is  
15 the Mojave substation, located at 1771 State Highway 58, approximately 4.5 miles north of the  
16 solar facility site. The Kern County Fire Department (KCFD) would provide fire protection and  
17 emergency medical and rescue services for the solar facility and gen-tie project areas. The closest  
18 KCFD fire station is Station #14 at 1953 State Highway 58, located approximately 5.7 miles north  
19 of the solar project site in the community of Mojave, CA.

20 The closest airport to the project site is the Mojave Airport which is 2.75 miles north of the gen-tie  
21 routes and approximately 5-miles from the solar facility site.

22 The project solar facility site and gen-tie lines are not located within an area that is designated by  
23 the California Department of Conservation (CDC) as Prime Farmland, Farmland of Statewide  
24 Importance or Unique Farmland. No lands within the solar facility boundary are subject to a  
25 Williamson Act Land Use Contract. The Williamson Act of the US state of California (officially,  
26 the California Land Conservation Act of 1965) is a California law that provides relief of property  
27 tax to owners of farmland and open-space land in exchange for a ten-year agreement that the land  
28 will not be developed or otherwise converted to another use.

## 29 **2.3.2 Local Setting and Surrounding Land Uses**

### 30 **2.3.2.1 Proposed Solar Facility Site**

31 Edwards AFB encompasses approximately 481 square miles. The project site is approximately 1.1  
32 miles east of SR 14 and 0.5 mile east of Sierra Highway. The proposed project lies within an  
33 undeveloped portion of Edwards AFB. The site is covered with low-lying desert vegetation and is  
34 generally flat (elevations ranging from approximately 2,545 feet above mean sea level (amsl) to  
35 approximately 2,480 feet amsl), with a few dirt roads traversing the site. The perimeter of the  
36 project site is partially surrounded by a chain-link barbed-wire fence along Lone Butte Road and  
37 Trotter Avenue. There are power lines along Division Street, which runs north-south through the  
38 western portion of the project site. There are also power lines located along Trotter Avenue, which  
39 turns at a slight diagonal to the southeast and through the eastern portion of the project site.

1 Otherwise, there are no existing structures, paved drives, lighting, or other improvements on the  
2 site. There are no natural or man-made water features on the project site. There are ephemeral  
3 playas on the project site that are temporarily inundated with water, but these are not considered  
4 water features.

5 As shown in **Figure 2-2 Site Boundaries**, the project site is bounded by Trotter Avenue to the  
6 north and Lone Butte Road to the west. The area directly north and west of the project site includes  
7 scattered residential uses. The lands abutting the project site to the east and south are undeveloped  
8 and are located within the perimeter of Edwards AFB. Vacant land covered with sparse, low-lying  
9 desert vegetation characterizes the lands surrounding the rest of the proposed solar facility site.  
10 There are currently no active agricultural land uses within or surrounding the proposed solar facility  
11 site.

12 According to the Edwards AFB Installation Development Plan, the proposed solar facility area has  
13 a land use designation of Research and Development and a zoning classification of Range Zone.  
14 Future uses planned for within the Range Zone include continued development of existing activities  
15 as well as development of solar power facilities and other leased uses. The proposed solar facility  
16 area is predominantly used for aircraft test ranges and maintained and unmaintained landing sites.  
17 **Table 2-1**, Project Site and Surrounding Land Uses, depicts the project site and surrounding land  
18 uses.

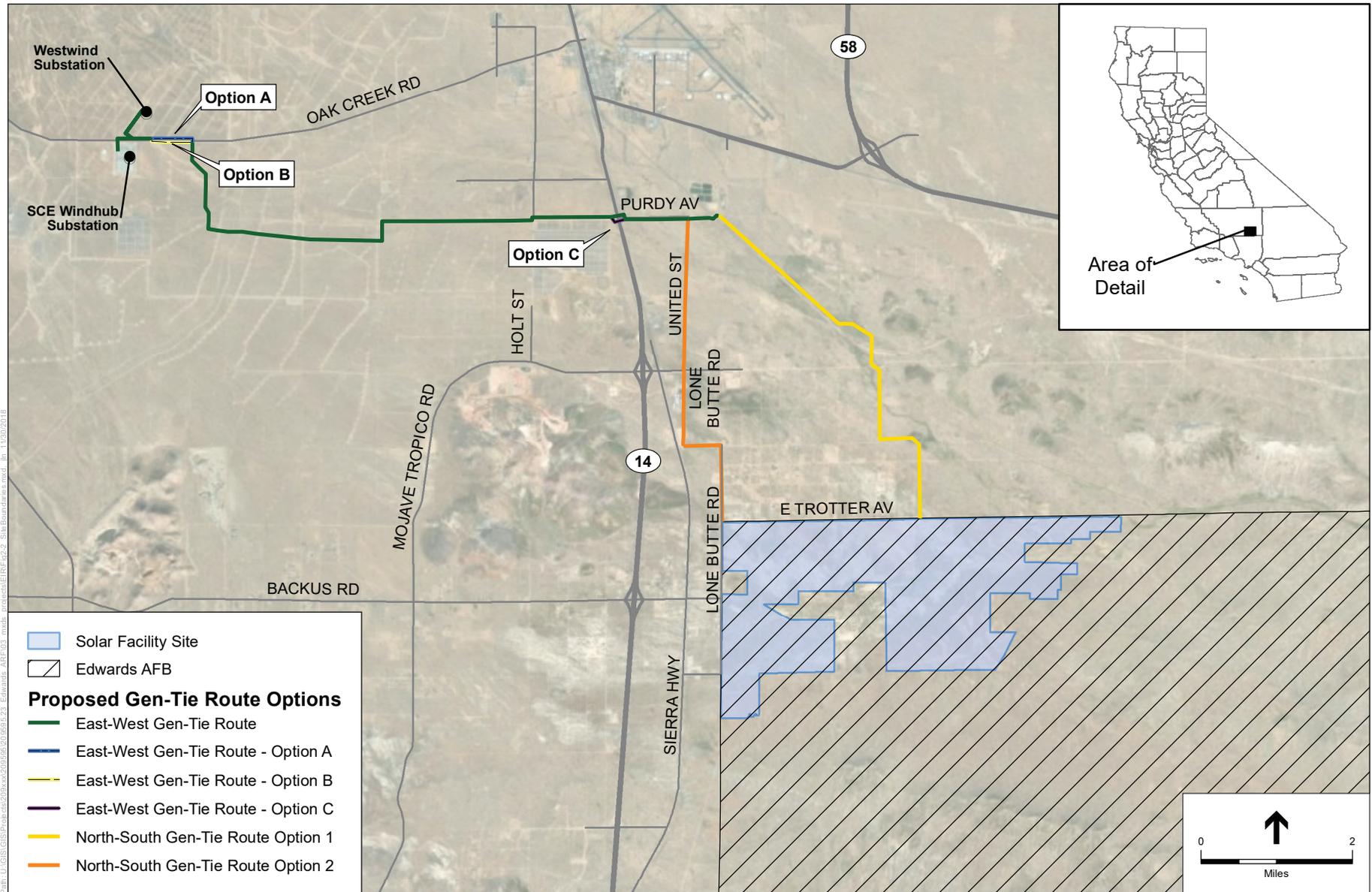


Figure 2-2: SITE BOUNDARIES

**TABLE 2-1  
PROJECT SITE AND SURROUNDING LAND USES**

<b>Direction from Project Site</b>	<b>Existing Land Use</b>	<b>General Plan Land Use Designations</b>	<b>Zoning Designations</b>
Project Site	Vacant Land	Map Code 1.1 (State and Federal Land) - Applied to all property under the ownership and control of the various State and federal agencies operating in Kern County (military, U.S. Forest Service, Bureau of Land Management, Department of Energy, etc.).	Located within Edwards AFB are not subject to Kern County zoning
North	Scattered Single-Family Residences; Vacant Land	<p>Map Code 4.1 (Accepted County Plan Areas [Mojave]) –The Mojave Priority Area Map identifies the lands immediately north of the site as the West Edwards Road Settlement.</p> <p>Map Code 8.5 (Resource Management) -- Primarily open space lands 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.</p> <p>Map Code 6.2 (General Commercial) - Retail and service facilities of less intensity than regional centers providing a broad range of goods and services which serve the day-to-day needs of nearby residents.</p> <p>Map Code 5.6 (Residential - Minimum 2.5 Gross Acres/Unit) -This constitutes a single-family designation with rural service needs in the valley and desert regions, while in the mountain region residential uses of this density will require urban service provision.</p> <p>Map Code 5.7 (5.0 Gross Acres/Dwelling Unit Maximum) - Designated in the outlying, less densely settled areas, often characterized with physical constraints and not requiring connections to public water and sewer infrastructure.</p> <p>Map Code 8.5/2.5 (Resource Management/Flood Hazard) – See above for summary of Map Code 8.5.</p> <p>Map Code 2.5 (Flood Hazard) – Special Flood Hazard Areas (Zone A), as identified on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency (FEMA) and supplemented by floodplain delineating maps that have been approved by the Kern County Engineering and Survey Services Department.</p>	<p>Limited Agriculture (A-1) - Designates 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.</p> <p>Estate (E 10) - Designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be ten (10) acres.</p> <p>Estate (E 2 1/2); - Designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be two and one-half (2 1/2) acres.</p> <p>Residential Suburban (RS) - This combining district expands the number and type of permitted domestic agricultural uses within rural residential areas. The uses allowed and regulations established by the RS District are in addition to regulations of the base district with which the RS District is combined.</p> <p>Mobile Home (MH) - This combining district provides for the installation of mobile homes with or without foundations in agricultural, resource-related, and residential zoned areas. The uses allowed and regulations established by the MH District are normally in addition to the regulations of the base district with which the MH District is combined.</p> <p>General Commercial (C-2) - Designates areas for the widest range of retail commercial activities, including regional shopping centers and heavy commercial uses. The C-2 District may also be combined with the Cluster (CL) Combining District to achieve innovative, creative office or commercial development.</p> <p>Precise Development Combining (PD) - Designates areas with unique site characteristics or environmental conditions or areas surrounded by sensitive land uses to ensure that development in such areas is compatible with such constraints.</p>

**TABLE 2-1  
PROJECT SITE AND SURROUNDING LAND USES**

Direction from Project Site	Existing Land Use	General Plan Land Use Designations	Zoning Designations
West	Scattered Single-Family Residences; Vacant Land	Map Code 4.2 (Interim Rural Community Plan [Actis]) – The Actis Interim Rural Community Plan map designates the area immediately west of the site as Map Code 7.2: Service Industrial.; Map Code 7.2 (Service Industrial) - Commercial or industrial activities which involve outdoor storage or use of heavy equipment. Such uses produce significant air or noise pollution and are visually obtrusive. Uses shall include, but are not limited to, the following: Automobile and truck parking, storage and repair shops, freighting or trucking yards, bottling plants, breweries, welding shops, cleaning plants, and other manufacturing and processing activities. Map Code 8.5 (Resource Management) – See above.	Medium Industrial (M-2) - Designates areas for general manufacturing, processing, and assembly activities. Uses may not produce fumes, odor, dust, smoke, gas, or vibrations extending beyond zoning district boundaries.; Floodplain Primary (FPP) - Protects public health and safety and minimizes property damage by designating areas that are subject to flooding with high velocities or depths and by establishing reasonable restrictions on land use in such areas. Uses in the FPP District are limited to those low intensity uses not involving buildings, structures, and other activities that might adversely affect or be adversely affected by flow of water in the floodway. Precise Development (PD)-See above.
East/South	Edwards Air Force Base, Vacant Land	Map Code 1.1 (State and Federal Land) – See above.	Lands to the east and south of the proposed site are within Edwards AFB, and are not subject to Kern County zoning

1

2 **2.3.2.2 Proposed Gen-Tie Line Corridor**

3 A 230 kV gen-tie line would connect the Edwards AFB solar generation site with either the existing,  
 4 privately owned Westwind Substation and/or to the SCE Windhub Substation. The gen-tie line  
 5 must extend north and west of the solar facility to reach the substations. In general, the gen-tie route  
 6 can be broken down into two categories based on the direction of the corridor: a north–south  
 7 connection and an east–west connection. One north–south connection route and one east–west  
 8 connection route must be selected to implement the project. There are two options for the north–  
 9 south gen-tie connection. The proposed project would include only one of these north–south  
 10 connection options. There are two connection options for the east–west gen-tie connection as well  
 11 as a third variation of the east–west routes. The proposed project would include only one of these  
 12 east–west connection options. All alignment options are assessed for their potential environmental  
 13 effects in this EIS/EIR.

14 **North–South Gen-Tie Routes**

15 **Figure 2-3**, North-South Gen-Tie Route Options, shows the approximate location of each the  
 16 north–south gen-tie route options; North–South Gen-Tie Route Option 1 is shown in yellow and  
 17 North–South Gen-Tie Route Option 2 is shown in orange.

18 These north–south route options include the following:

- 19 • **North–South Gen-Tie Route Option 1:** An approximately 5.6-mile-long gen-tie route on  
 20 the east that generally runs from the Edwards AFB solar generation site north adjacent to  
 21 20th Street, west adjacent to East Reed Avenue, north adjacent to 15th Street, then  
 22 generally follows the north side of the Burlington Northern Santa Fe Railway (BNSF) and  
 23 finally runs west to the intersection of Purdy Avenue and the BNSF.

- 1       • **North–South Gen-tie Route Option 2:** An approximately 4.5-mile-long gen-tie route that  
 2       generally runs from the northwestern edge of the Edwards AFB solar generation site north  
 3       on Lone Butte Road, west on West Reed Avenue, and north on United Street, where it  
 4       intersects with Purdy Avenue.

5       ***East–West Gen-Tie Routes***

6       **Figure 2-4**, East-West Gen-Tie Route Options, shows the approximate location of the east–west  
 7       gen-tie route, which includes three route options. Options A and B run along Oak Creek Road—  
 8       the proposed project would include only one of these options for the east-west gen-tie route. Option  
 9       C provides an alternative crossing location of SR 14.

10      More specifically, from the intersection of North–South Gen-Tie Option 1 and Purdy Avenue, the  
 11      east–west gen-tie is approximately 9.8 miles in length and would run west along Purdy Avenue for  
 12      approximately 4.5 miles and then would run south of Purdy Avenue, but north of Decatur Avenue  
 13      for approximately 2.5 miles and then turn north back to Purdy Avenue. From Purdy Avenue, the  
 14      east–west gen-tie line would run north and northwest for approximately 1.1 miles to Oak Creek  
 15      Road.

16      Along Oak Creek Road for 0.6 miles, there are two options for the east–west gen-tie route. Option  
 17      A would run north of Oak Creek Road and Option B would run south of Oak Creek Road. From  
 18      these two options, the east–west gen-tie route would run 0.4 miles west before splitting to the  
 19      northwest and/or south to connect to the privately owned Westwind Substation and/or SCE’s  
 20      Windhub Substation.

21      An additional Option C at the intersection of Purdy Avenue and SR 14 is also proposed. Under  
 22      Option C, the gen-tie route would cross SR 14 along the south side of Purdy Avenue. Option A and  
 23      Option B would cross SR 14 along the north side of Purdy Avenue and would continue to run west  
 24      along Purdy Avenue continuing on the same route.

25      **Table 2-2**, Proposed Gen-Tie Route Options, provides a brief description of the two north–south  
 26      route options and the three east–west route options.

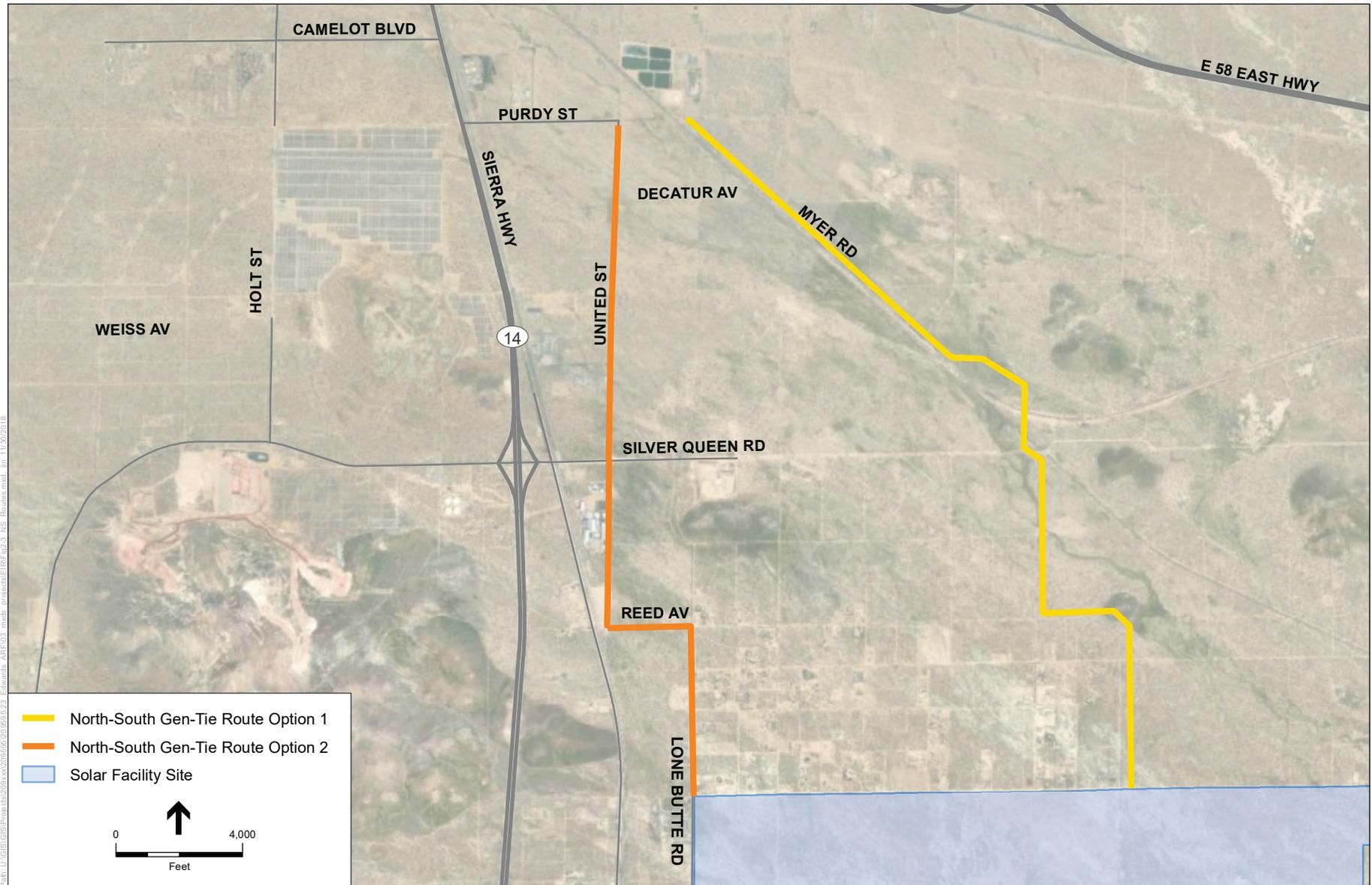
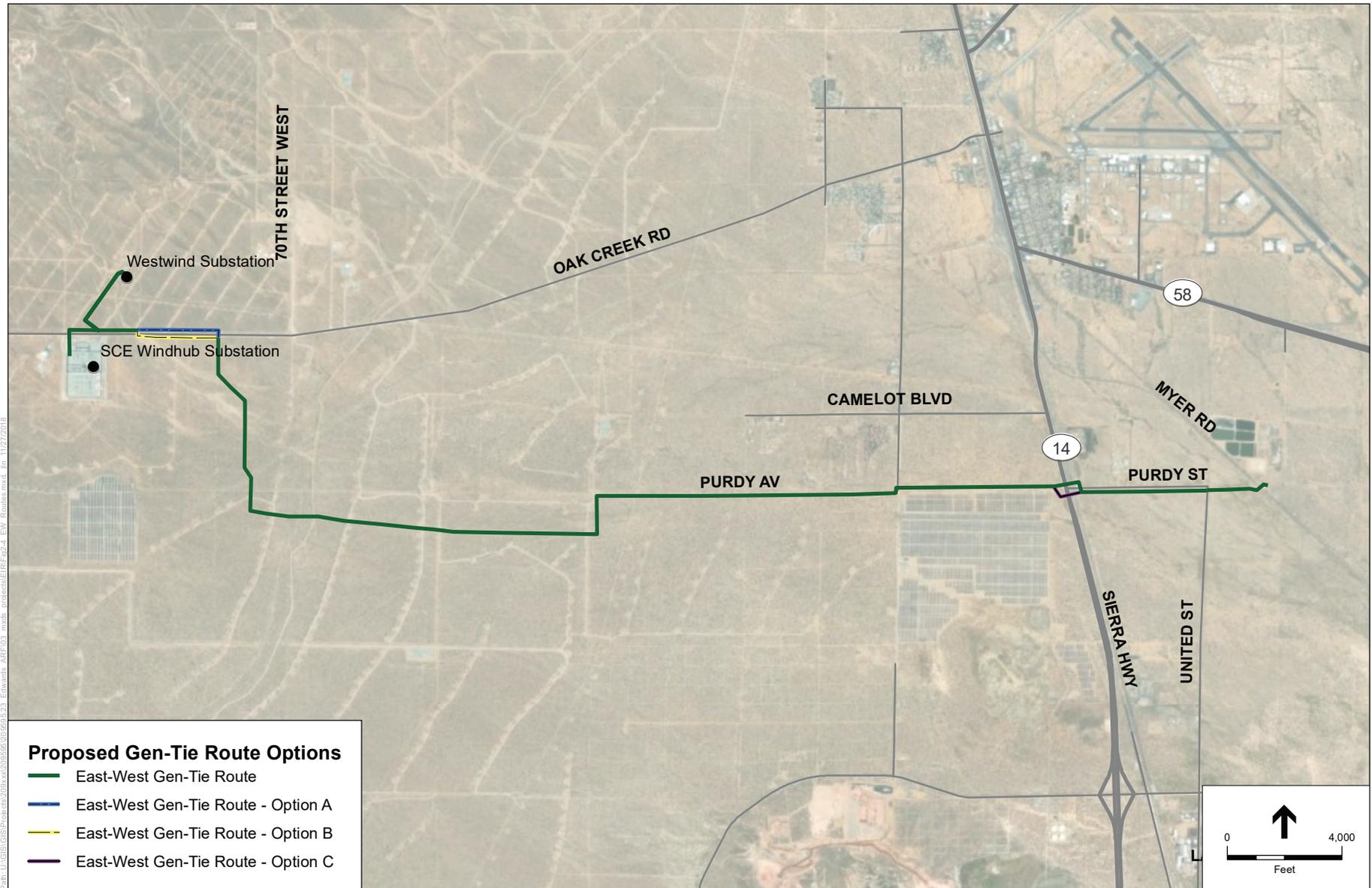


Figure 2-3: NORTH-SOUTH GEN-TIE ROUTE OPTIONS



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Figure 2-4: EAST-WEST GEN-TIE ROUTE OPTIONS

1  
2

**TABLE 2-2  
PROPOSED GEN-TIE ROUTE OPTIONS**

Direction from Solar Site to Substations	Option	Description
North–South	1	5.6-mile-long gen-tie route; runs from the AFB solar generation site north to the intersection of Purdy Avenue and the BNSF.
	2	4.5-mile-long gen-tie route; runs from the northwestern edge of the AFB solar generation site to the intersection of United Street and Purdy Avenue.
East–West	A	9.8-mile-long gen-tie route; runs from the intersection of Purdy Avenue and the BNSF west to the Westwind Substation and the Windhub Substation. Along Oak Creek Road for 0.6 mile there are two options for the east–west gen-tie route—Option A would run north of Oak Creek Road.
	B	9.8-mile-long gen-tie route; runs from the intersection of Purdy Avenue and the BNSF west to the Westwind Substation and the Windhub Substation. Along Oak Creek Road for 0.6 miles, there are two options for the east–west gen-tie route—Option B would run south of Oak Creek Road.
	C	Option C alignment would cross SR 14 along the south side of Purdy Avenue. Options A and B would cross SR 14 along the north side of Purdy Avenue.

3  
4

## 2.4 Alternatives Selection Standards

Both CEQA and NEPA require the development and consideration of viable alternatives that meet the Air Force’s purpose and need for implementing the Proposed Action. This section outlines the alternative selection standards that were used by the Air Force and County to develop and then analyze the range of reasonable alternatives. Alternative selection standards are grouped into three main categories, including renewable energy technology selection standards, project siting selection standards, and gen-tie route selection standards. These standards were used to help determine feasibility of alternatives and the extent to which project alternatives would fulfill the purpose, need, and project objectives identified in Chapter 1, *Introduction*. The description of reasonable selection standards explains how viable renewable energy technologies for the Proposed Action were determined and further explains why other technology alternatives were eliminated from more detailed study and comparison. Additionally, this section identifies the selection standards that are used to compare reasonable alternative sites for the Proposed Action and further explains why other sites were not deemed reasonable for further detailed study. Finally, this section describes the selection standards used to define reasonable alternative routes for the gen-tie line, which is needed to transport the generated electrical power to the grid for wider distribution and use. A discussion of alternatives considered but not carried forward for analysis follows the discussion of each alternative selection standard category.

### 2.4.1 Renewable Energy Technology Selection Standards and Alternatives Consideration Process

To be considered a viable renewable energy alternative for Edwards AFB, the proposed technology had to meet the following selection standards:

- Lease Authority Compatibility – The lease shall comply with Title 10 U.S. Code (USC) Section 2667, as amended, to include but not limited to: promoting the national defense or

- 1 be in the public interest; real property that is under the control of the Secretary concerned;  
2 is not for the time needed for public use; and is not excess property.
- 3 • Resource Availability – The renewable energy resource (solar, wind, geothermal, etc.)  
4 must be present on Edwards AFB, and must be capable of efficiently generating sufficient  
5 renewable energy at rates at or below current market energy rates when factoring in  
6 renewable energy tax credits and subsidies. If a renewable energy resource is not present  
7 in sufficient quantity, then the technology was not carried forward for further analysis.
  - 8 • Mission Compatibility – To be carried forward as a viable alternative for analysis, the  
9 proposed renewable energy technology must be compatible with flight testing and other  
10 military missions occurring on Edwards AFB. Also, the Proposed Action must not interfere  
11 with the operations of other military bases in the region. A renewable energy technology  
12 that is inconsistent with Air Force or other military service operations is not considered a  
13 reasonable alternative.
  - 14 • Cost Feasibility and Commercial Viability – The Proposed Action must be economically  
15 viable for a developer, the utility off-taker, and the Air Force in order to achieve lease  
16 consideration for the fair market leasehold interest. The Proposed Action must be  
17 consistent with generally accepted commercial and/or utility renewable energy  
18 requirements. The Proposed Action must be mature and financeable at reasonable market  
19 rates.
  - 20 • Water Consumption – The technology requirements for water usage must not contribute to  
21 depleting or negatively affect necessary potable water resources that support and sustain  
22 Edwards AFB’s mission and operations. Further, the technology similarly must not require  
23 disproportionate water usage that could deplete and negatively reduce available local or  
24 regional potable water resources.

### 25 **2.4.1.1 Alternative Technology Consideration Process**

26 The Air Force considered a range of renewable energy technologies for the proposed renewable  
27 energy Enhanced Use Lease (EUL) and for this EIAP. The first phase of alternatives consideration  
28 included an analysis by the Headquarters Department of the Air Force. As part of the alternatives  
29 consideration process, the Air Force considered a wide array of proven renewable energy  
30 technologies and their energy generation potentials (AFRPA, 2007). After reviewing information  
31 on the potential methods and technologies available for renewable energy production, resources  
32 needed to support the technology, market demand, technology costs, and the available Air Force  
33 non-excess land, the Air Force determined that Edwards AFB had considerable potential to develop  
34 or allow development of solar energy technology (AFRPA, 2007). Solar technology was  
35 determined to be a rapidly improving technology capable of generating energy at utility-scale and  
36 at commercially competitive rates. Additionally, the technology could be developed without  
37 conflicting with the military and commercial mission at Edwards AFB. Edwards AFB, located in  
38 the Mojave Desert region in eastern California, is in an area of California with some of the highest  
39 solar energy radiation levels in the United States (**Figure 2-5: Solar Energy Generation Potential;**  
40 National Renewable Energy Lab, 2012). For these reasons, solar technologies were determined to  
41 be the most feasible opportunity for a renewable energy development EUL at Edwards AFB  
42 (AFRPA, 2007).

1 In 2010, on behalf of the Air Force, the Pacific Northwest National Lab (PNNL) completed an  
2 assessment that validated the viability of large-scale renewable energy development technologies  
3 and opportunities on Air Force real property. The results of this analysis confirmed that solar energy  
4 technologies could support utility-scale renewable energy development proposals at Edwards AFB,  
5 whereas other technologies were not feasible (PNNL, 2010).

#### 6 **2.4.1.2 Alternative Technologies Considered but Dismissed**

7 The solar photovoltaic technology was selected due to its compatibility with Air Force missions,  
8 commercial viability, and reduced environmental impacts as compared to other alternative  
9 technologies. The following alternative technologies were considered but dismissed:

10 1) **Wind Energy Technologies** – Mission compatibility analysis determined that the Air  
11 Force Test Center (AFTC), National Aeronautics and Space Administration’s (NASA’s)  
12 Armstrong Flight Research Center Research Center, commercial aircraft testing operations,  
13 and United States Marine Corps (USMC) operation elements could be compromised by utility-  
14 scale wind energy development at Edwards AFB. Each of these mission elements requires both  
15 ground-to-air and air-to-ground radar and communications. Tehachapi Pass wind development  
16 created adverse radar interactions for test flights and impacted the base’s mission. In addition  
17 to the radar impacts, any development that interfered with or used bandwidth or “spectrum”  
18 could make it more difficult for AFTC to evaluate communication technologies in a “sterile”  
19 environment. Furthermore, results of a PNNL study concluded that wind would not be  
20 sufficient to support commercial, utility-scale energy project development (PNNL, 2010).  
21 Typically, sustained class 4 winds moving at 7 to 7.5 meters per second are required for large-  
22 scale wind project development. The 2010 report found that Edwards AFB typically  
23 experiences class 2 and 3 winds of 5.6 to 7 meters per second, which would not be sufficient  
24 to support utility-scale energy generation. Because wind technologies did not meet alternative  
25 selection standards for mission compatibility and resource availability, wind energy was not  
26 carried forward as a viable alternative for analysis.

27 2) **Development of Geothermal Renewable Energy Technology** – Geothermal energy is  
28 energy produced by harnessing heat energy from below the earth’s surface. Heat produced deep  
29 within the earth’s interior is conducted through the earth toward the surface, producing a  
30 geothermal temperature gradient. The geothermal gradient varies significantly across the  
31 earth’s surface because of variations in the thickness of the earth’s crust, thermal conductivity  
32 of various rock types, upwelling of volcanic or igneous rocks, and circulation of groundwater.

33 In some areas with high geothermal gradients, the thermal energy contained below the  
34 surface can be harnessed by geothermal power plants to produce electricity.

35 Availability of geothermal resources on Edwards AFB that have the potential to generate  
36 cost-effective renewable energy has not been verified and studies necessary to confirm  
37 such availability are very costly. To be commercially viable, geothermal development  
38 requires an area with subsurface temperatures that reach a minimum of 100 degrees Celsius  
39 at a depth of 3,000 meters and also have heat flow rates greater than 80 milliwatts per  
40 square meter. Edwards AFB is estimated to have subsurface temperatures of 95 degrees  
41 Celsius at a depth of 3,000 meters and heat flow rates of 65–75 milliwatts per square meter  
42 (PNNL, 2010). These estimates are below the thresholds needed to support a viable  
43 commercial renewable energy development.

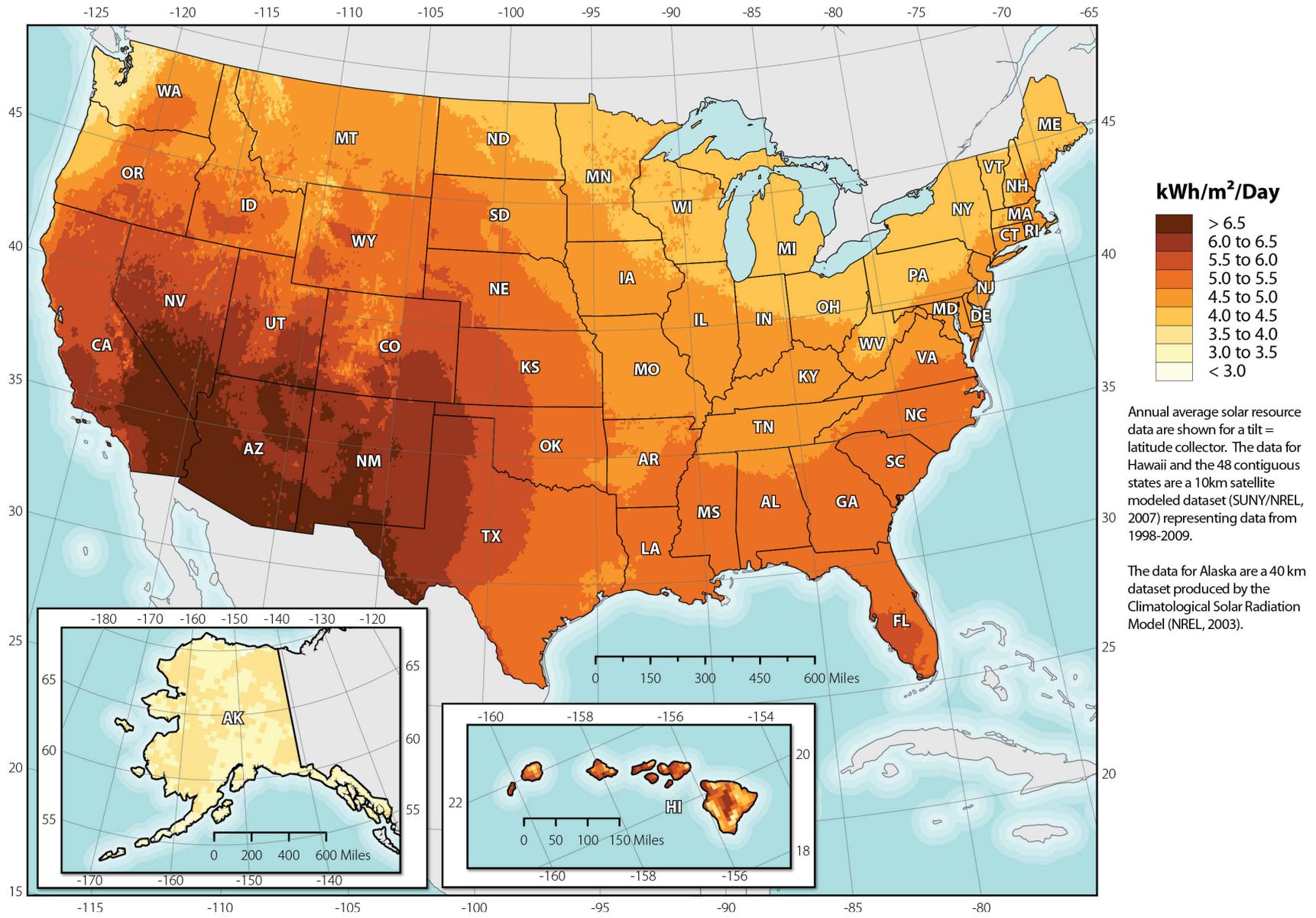


Figure 2-5: SOLAR ENERGY GENERATION POTENTIAL

1 Under applicable statutory authority, value could be derived from the energy produced;  
2 however, that value seems both low and uncertain given the current state of knowledge as  
3 to geothermal energy at Edwards AFB. Therefore, this alternative has not been carried  
4 forward for further analysis.

5 **3) Development of a Biomass or Waste-to-Energy Technology** – Edwards AFB has limited  
6 access to materials locally that could be used to support a biomass or waste-to-energy plant. It  
7 would not be cost effective or commercially viable to transport this material to make a large-  
8 scale plant viable (PNNL, 2010). Because these technologies do not meet alternative selection  
9 criteria for resource availability and commercial viability at Edwards AFB, these technologies  
10 were not carried forward for further analysis.

11 **4) Development of Concentrating Solar Thermal Technologies** – Among the available  
12 technologies, solar thermal technologies were determined to be a commercially viable  
13 renewable energy resource at Edwards AFB. Solar power technologies such as the parabolic  
14 trough, solar power tower, and compact linear Fresnel reflector concentrate the sun’s energy to  
15 produce heat by using mirrors or lenses to focus a large area of sunlight onto a receiver filled  
16 with a heat transfer fluid (typically a mix of synthetic organic oils). The solar-heated fluid (at  
17 more than 300 degrees Celsius) flows through a heat exchanger, where its heat is transferred to  
18 water, producing steam and driving a generator. Concentrating solar systems consume large  
19 volumes of water during the operation of the system. Closed-loop concentrating solar systems  
20 can capture the steam produced and reuse it. The closed-loop technology uses significantly less  
21 water than the traditional open system, but does not generate electricity as efficiently as an  
22 open system. Both closed-loop and open concentrating solar systems are not deemed  
23 compatible development options at Edwards AFB by the Air Force. The Mojave Desert region  
24 of California has extremely low levels of groundwater recharge, and concentrating solar  
25 thermal technologies would not be sustainable developments within this region and setting.  
26 Solar thermal technology may also have greater impacts to military flight and training activities  
27 as a result of glint and glare. This alternative technology has therefore not been carried forward  
28 for further analysis.

## 29 2.4.2 Proposed Action Site Selection Standards and 30 Alternatives Consideration Process

31 To be considered a viable renewable energy siting alternative for the Proposed Action, the  
32 technology had to meet all of the following selection criteria.

- 33 • **Land Availability** – The renewable energy site considered must comprise at least  
34 1,500 acres of contiguous, non-excess Air Force real property capable of supporting a  
35 utility-scale (greater than 100 MW) energy project. This is required to meet the project’s  
36 purpose and need, which includes optimizing the value of Air Force real property by  
37 leasing land through the EUL program.
- 38 • **10 USC 2667 Compliant Property** – To be carried forward as a viable site for analysis, the  
39 renewable energy site must be under the exclusive control of the Secretary of the Air Force  
40 and must not be needed for public use. The property cannot be excess property, as defined  
41 by 40 USC 102.
- 42 • **Mission Compatibility** – To be carried forward as a viable alternative for analysis, the  
43 renewable energy site and technologies considered must be compatible with flight testing  
44 and other military and commercial missions occurring on Edwards AFB. The Proposed  
45 Action must also not interfere with the operations of other bases in the region. Renewable

1 energy proposals at sites on Edwards AFB that impact execution of Air Force or other  
2 military service operations are not considered viable alternatives.

- 3 • Force Protection Compatibility – To be carried forward as a viable alternative, the  
4 renewable energy site considered must not compromise base operations or the ability to  
5 implement force protection measures and base security. Viable renewable energy sites  
6 must be located on the perimeter of the installation or in other contained areas, where a  
7 developer and base can monitor and validate the credentials of employees during the  
8 development and operation of the solar facility.
- 9 • Grid Access, Proximity to Interconnection – Alternative sites considered must be within  
10 16 miles of a viable interconnection point to allow the Proposed Action access to high-  
11 voltage transmission lines with the capacity to carry renewable energy generated by the  
12 project to customers in need of electricity. Construction of aboveground transmission  
13 typically can exceed \$1 million per mile when all construction and mitigation costs  
14 associated with transmission lines are considered. Gen-tie length of more than 16 miles  
15 would jeopardize the economic and technical feasibility of the EUL project. The grid  
16 infrastructure must be capable of transporting or being cost-effectively upgraded to  
17 transport electricity generated by the proposed project. Two interconnection points have  
18 been identified as viable locations for connection of the gen-tie to the grid. These locations  
19 include the SCE Windhub Substation and the privately owned Westwind Substation.
- 20 • Site Accessibility – Sites must be accessible for workers and equipment to support  
21 construction of the renewable energy facility. The renewable energy facility must be within  
22 a couple of miles of existing unimproved or paved roads to ensure the development team  
23 can proceed with constructing and operating the facility. The site must have the ability for  
24 trucks to bring heavy equipment, supplies, water, and project materials to the site.
- 25 • Physical Compatibility of the Site with Solar PV Development – Topography and slope of  
26 the proposed siting location must support the proposed project. Topography should consist  
27 of land that is generally flat and of less than 2 percent grade. The site must provide for  
28 good southern exposure to capture the sun’s energy without topography that causes sun  
29 blockage or shading, and the site must physically support construction of the project.
- 30 • Desert Tortoise Critical Habitat – Renewable energy sites on Edwards AFB consist of land  
31 that is not designated as federally listed desert tortoise critical habitat, as designated by the  
32 U.S. Fish and Wildlife Service (USFWS). The Air Force recognizes that the rapid pace of  
33 development in and around these areas has impacted areas set aside by the USFWS for  
34 desert tortoise conservation. As designated by USFWS and included in the Integrated  
35 Natural Resources Management Plan, a portion of the eastern side of Edwards AFB is  
36 critical recovery habitat. This area would therefore not be considered for EUL project  
37 development.

#### 38 **2.4.2.1 Site Evaluation Process**

39 The Air Force has considered a broad range of alternatives before arriving at the site considered for  
40 the Proposed Action. The first phase of alternatives consideration included an analysis directed by  
41 the Headquarters Department of the Air Force. Initial analysis in 2007 identified three different  
42 areas on Edwards AFB on the perimeter of the installation that could potentially support a  
43 renewable energy EUL project. Following the initial identification of these sites, Air Force and  
44 Edwards AFB staff further evaluated lands that could support the Proposed Action.

1 Edwards AFB staff developed a geographic information system (GIS)-based model of the entire  
2 base and incorporated numerous data layers for land use and air space restrictions, aspect, and other  
3 environmental constraints. The model was run to define potentially compatible solar PV  
4 development acreage within the confines of the 308,000-acre base.

#### 5 **2.4.2.2 Alternative Sites Considered but Dismissed**

6 1) **Sites on the eastern side of Edwards AFB** – Sites on the eastern perimeter of the  
7 installation were ultimately excluded from further analysis to avoid siting of the facility in an  
8 area designated as desert tortoise critical habitat. The Air Force determined that it would not  
9 site the Proposed Action exclusively in desert tortoise critical habitat, given the large size of  
10 the project and potentially negative impacts on the federally-listed species. These sites are also  
11 not carried forward as the length of the gen-tie required to reach interconnection points could  
12 also not be economically supported by the Proposed Action. Potential EUL sites on the eastern  
13 side of Edwards AFB are therefore not carried forward for further environmental analysis.

14 2) **Centrally located sites inside the perimeter of Edwards AFB** – Force protection  
15 compatibility of the EUL and base security are key concerns with EUL project siting at  
16 Edwards AFB. Locating the project centrally within Edwards AFB, as opposed to on the  
17 perimeter of the installation, would present challenges both for force protection and mission  
18 compatibility. During construction and operation of the facility, it would be difficult for  
19 Edwards AFB to monitor activities of contractors. Additionally, any facility sited centrally  
20 within Edwards AFB's perimeter would likely include aboveground electrical transmission  
21 infrastructure that crosses or interferes with access and use of Air Force or joint service training  
22 areas. These sites are also not carried forward because the length of the gen-tie required to  
23 reach interconnection points could also not be economically supported by the Proposed Action.  
24 For these reasons, sites located centrally, within the perimeter of Edwards AFB, are not carried  
25 forward for further analysis.

26 3) **Sites more than 16 miles from grid interconnection** – All potentially compatible  
27 Proposed Action sites identified, other than those sites in the northwestern corner of the  
28 installation, would require a minimum of eight additional miles of gen-tie line to allow  
29 electricity generated from the Proposed Action to reach potential grid interconnection  
30 locations. At over \$1 million per mile, electrical tie-in costs for the gen-tie would be  
31 economically unfeasible for the Proposed Action to support. Potential sites located in the  
32 southwestern corner of the installation, and sites in the north central perimeter of the  
33 installation, were eliminated from further analysis because they are not within 16 miles of the  
34 proposed electrical interconnection points. Additionally, other sites were not carried forward  
35 for analysis as the sites conflict with the installation's training mission. This site, in the  
36 southwest corner of the installation, is located underneath a route designated as the Alpha  
37 corridor, a supersonic flight corridor needed to support installation mission activities.

38 4) **Non-contiguous sites less than 1,500 acres** – Construction and operation of the facility  
39 across multiple, unconnected, smaller footprints on Edwards AFB would require more access  
40 roads and support infrastructure, would increase system maintenance and interconnection  
41 costs, and would not allow the project to be conducted in a cost-feasible manner. Construction,  
42 interconnection, operation, and maintenance costs for the project would all increase.  
43 Additionally, several smaller parcels of land would present the Air Force with a higher risk of  
44 mission conflicts in the future, as opposed to one siting location for the EUL project. This  
45 alternative would require additional electrical transmission from multiple sites, as opposed to  
46 one, and this would also decrease cost feasibility and increase impacts associated with the gen-  
47 tie/electrical transmission construction. For these reasons, the consideration of project siting on

1 multiple small, noncontiguous sites on Edwards AFB is not being carried forward for further  
2 analysis.

3 **5) On-base roof-mounted and infill PV siting** – This alternative would include the use of  
4 parking lots, rooftops, decommissioned facilities, and sites of previously demolished buildings  
5 as locations for siting the EUL project’s solar panels. Constructing the EUL in such a manner,  
6 while maximizing use of that land, could not be accomplished in a cost-feasible manner. This  
7 alternative would require additional electrical transmission and interconnection to consolidate  
8 energy produced from multiple distributed sites to deliver it off-base. This alternative would  
9 also require that rooftops of some outdated facilities be reinforced to support solar panels, and  
10 would require approximately 25 miles of gen-tie line connection to deliver electricity off-post.  
11 All of these considerations would add millions of dollars to Proposed Action development  
12 costs, and would not be commercially viable to implement for this project. Additionally, most  
13 of the facilities discussed as part of this alternative are centrally located on the installation, and  
14 construction would present potential mission conflicts and force protection issues to  
15 accomplish the EUL at the desired scale. This alternative would also not provide the Air Force  
16 with a mechanism to generate lease consideration to support facility and energy efficiency  
17 improvements. While roof-mounted and infill PV siting of smaller-scale projects would be  
18 viable, this alternative would not be viable for a large-scale EUL project. For these reasons, the  
19 alternative for siting the EUL on rooftops and on other disturbed sites has not been carried  
20 forward as part of this Proposed Action. It should be noted that off-base roof-mounted solar  
21 within Kern County is further discussed in Section 2.5.4, *Alternative D: No Ground-Mounted*  
22 *Utility-Solar Development – Distributed Commercial and Industrial Rooftop Solar Only*, and  
23 in Chapter 4, *CEQA Alternatives*.

24 **6) Sites located off of Edwards AFB** – Sites that are not owned by Edwards AFB were not  
25 carried forward for further consideration. These sites would fundamentally not meet the  
26 purpose and need for the Proposed Action as they would not provide the Air Force with the  
27 opportunity to optimize the value and use of its lands through the EUL program. These sites  
28 would not be on property under control of the Secretary of the Air Force and would not allow  
29 the Air Force to make progress toward its energy goals or the project objectives discussed in  
30 Chapter 1.

31 The only site on Edwards AFB that meets all alternative selection criteria is the EUL site located  
32 in the northwestern corner of the installation, shown in **Figure 2-6: Viable Proposed Action Siting**  
33 **Area on Edwards AFB**. This site consists of approximately 5,800 contiguous acres, does not  
34 conflict with current base missions, and is on the perimeter of the installation, which would better  
35 support Edwards AFB force protection requirements. Additionally, this site is less than 16 miles  
36 from potential grid interconnection points, which would allow the Proposed Action to be developed  
37 at feasible cost. The physical characteristics of the site are also conducive to site development.



## 2.4.3 Gen-Tie Route Selection Criteria and Alternatives Consideration Process

To be considered a viable gen-tie route alternative for the Proposed Action, the route selected must meet the following selection criteria.

- Route Distance – Gen-tie routes considered as viable alternatives must provide a direct route with minimal deviations from the project site to viable interconnection points. Viable interconnection points identified include the SCE Windhub Substation and/or the privately owned Westwind Substation. The gen-tie must not exceed 16 miles in total length to ensure cost viability of the proposed project.
- Maximize Use of Existing County Rights-of-Way (ROWs) – Gen-tie routes considered as viable alternatives would maximize the use of existing County ROWs to the greatest extent practicable to minimize impacts and potential conflicts associated with the project. Maximizing the use of existing ROWs would help ensure the gen-tie route is compatible with existing land use and would limit the number of property owners that could be affected.
- Minimize Amount of Private Land Utilized – Viable gen-tie route options carried forward for analysis include routes that minimize the number of land owners affected by the ROW requirements of the gen-tie to the greatest extent practicable. Additionally, efforts in routing would be made to avoid parcels of land with private ownership or those parcels that have multiple land owners or commercial ownership. Gen-tie routing in such a manner would reduce the number of potentially affected property owners, and would increase the likelihood of successful routing of the gen-tie.
- Maintain Compatibility with Existing Land Use Plans – Viable gen-tie routes would maintain consistent land use with County plans and would not adversely impact County operations and transportation planning.

### 2.4.3.1 Gen-Tie Route Evaluation Process

Analysis for the gen-tie route focused on linking the proposed project site to SCE's Windhub Substation and/or the privately owned Westwind Substation to the northwest of the solar array site. Based on the alternative selection criteria for the gen-tie line, potential routes have been established that extend from the project site and connect to the interconnection points at SCE's Windhub Substation and/or the privately owned Westwind Substation and are shown in Figures 2-3 and 2-4.

### 2.4.3.2 Alternative Sites Considered but Dismissed

The preferred gen-tie routes represent the known available, closest, and most direct routes between the project site and the substation. There are several possible alternative routes but they do not meet the criteria of closest and most direct. The County recognizes that within the corridor that is carried forward for analysis, there are dozens of options for routing through and around various land parcels that would be considered during the gen-tie route siting process. Alternatives requiring routes outside of the proposed gen-tie corridor do not meet the alternative selection criteria, however, and are therefore not carried forward for further analysis.

## 2.5 Alternatives Considered

This section of the EIS/EIR presents a description of the viable alternatives for implementing the Proposed Action that are evaluated in the EIS/EIR by the Air Force and the County that fall within the footprint of potential development identified by the Air Force. The Proposed Action is the development of a utility-scale (greater than 100 MW) energy project on a 4,000-acre EUL. Each alternative meets the minimum selection criteria discussed in Section 2.3.

### 2.5.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

This alternative includes the construction, operation, and decommissioning of a PV facility of up to 750 MW of energy on up to a maximum of 4,000 acres of undeveloped, non-excess real property on the project site in the northwest corner of Edwards AFB. Alternative A includes two gen-tie line options ranging in total length from approximately 14.3 miles to 15.9 miles, both of which would run in a northwest direction to the privately owned Westwind Substation for the first phase, and the SCE Windhub Substation in subsequent phases. The proposed route options for the gen-tie line are presented in Figures 2-3 and 2-4. Final routing would depend on the ability of a developer to secure access easements from public and private entities. Alternative A is the Air Force's preferred alternative.

It is reasonable to assume that a solar PV facility could be developed on the project site without a need for substantial grading; however, for the purpose of this analysis, it is assumed that the solar array construction would require grading of the project footprint. The solar panels would be installed using either a single-axis tracking system, whereby the panels are controlled to move with the sun, or a fixed-tilt system, whereby the panels are fixed at a particular angle. There would be site grading, concrete footings, and support beams in order to install the solar array. It is likely that pile foundations would need to be driven to depths of potentially 8 feet deep. Siting of panels would be in a grid-pattern at regular intervals to support maximum energy production and to facilitate ease of maintenance. **Figure 2-7:** Alternative A: Preferred Alternative, depicts a conceptual footprint for Alternative A within the EUL Study Area; the precise boundaries may shift depending on topography, cultural resources, and waters of the state. *Section 2.6, Proposed Project Description*, provides additional details regarding how the project would be constructed and operated.

### 2.5.2 Alternative B: 1,500-Acre EUL

Alternative B includes the construction, operation, and decommissioning of a utility-scale PV solar facility on up to a maximum of 1,500 acres of non-excess real property located within the project site. Alternative B would involve construction using the same technology and components described for Alternative A. This alternative would use the same gen-tie line route options proposed in Alternative A. The reduced project alternative would require less acreage and construction-related ground disturbance required to support the full project alternative described in Alternative A. **Figure 2-8:** Reduced Project Build-Out depicts the proposed site plan of the Alternative B solar facility.

### 2.5.3 Alternative C: No Action/No Project

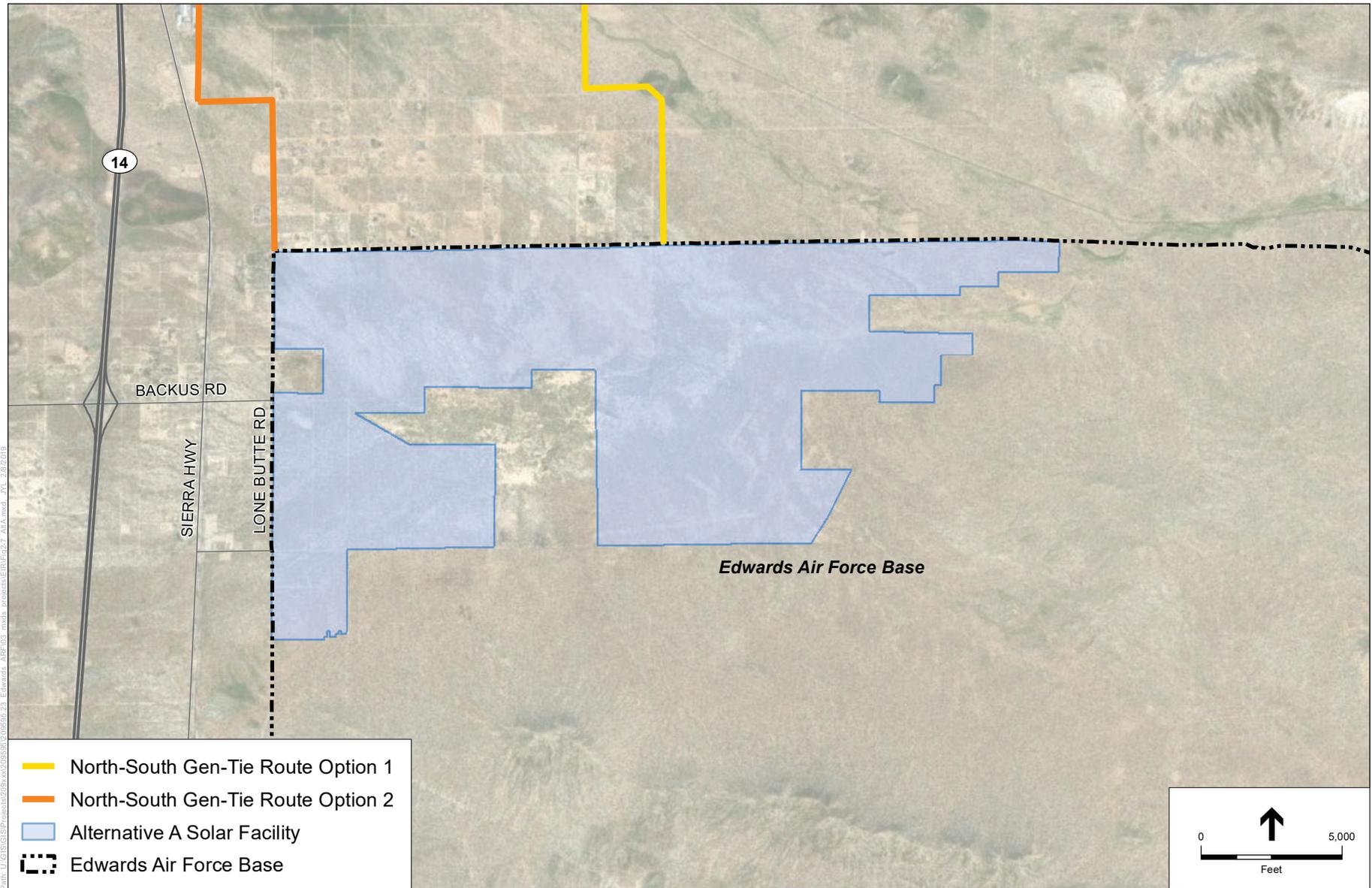
Under Alternative C, the proposed EUL action and solar array development would not occur. Base operations at Edwards AFB would continue without the benefit of the EUL or lease consideration. The Air Force would not be able to maximize the use of non-excess lands, make progress toward implementing Air Force energy goals, or move toward implementation of federal facility efficiency and energy mandates. Also, greenhouse gas (GHG) emissions would not be reduced, nor would the Air Force assist the County or State of California in attainment of Renewable Portfolio Standards. This alternative is equivalent to the No Action Alternative under NEPA (32 Code of Federal Regulations Section 989.8 (d)) and the No Project Alternative under CEQA (14 California Code of Regulations Section 15126.6(e)). The No Action/No Project alternative serves as a baseline from which to evaluate environmental impacts of the alternatives under NEPA.

### 2.5.4 Alternative D: No Ground-Mounted Utility-Solar Development – Distributed Commercial and Industrial Rooftop Solar Only

Alternative D applies only to CEQA. This alternative would involve development of a number of geographically distributed small to medium solar PV systems (100 kilowatts to 1 MW) on the rooftops of existing commercial and industrial facilities throughout Kern County. Depending on the type of solar modules installed and the type of tracking equipment used (if any), a similar or greater amount of acreage may be required to attain the same scale as the proposed project. Because of constraints such as space and shading, many rooftop solar PV systems would not attain the same level of efficiency per acre with respect to ground-mounted utility-scale solar PV generation. This objective would enable the generation of the same amount of electricity as the proposed project, but it would be for onsite use only and would not assist load-serving entities in meeting their Renewable Portfolio Standard goals. Similar to the proposed project, this alternative would be designed to operate year-round using an array of PV modules to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would be consumed onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

## 2.6 Proposed Project Description

The following section describes the project and provides information to enable a greater understanding of the Proposed Action. With the exception of the No Action/No Project Alternative, the project alternatives considered in Section 2.5 each include carrying out the activities discussed in Section 2.6.



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Figure 2-7: ALTERNATIVE A SITE PLAN

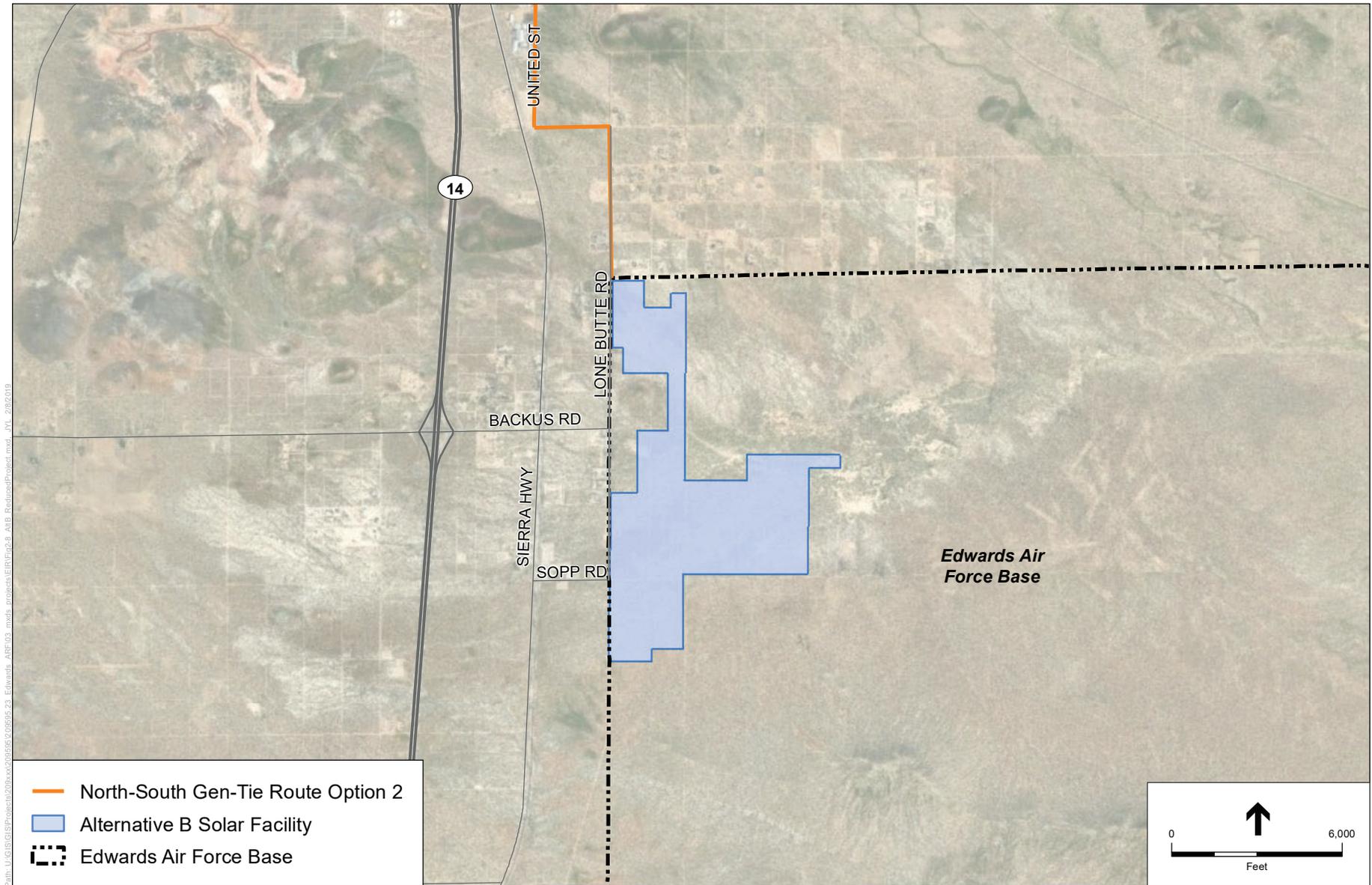


FIGURE 2-8: ALTERNATIVE B REDUCED PROJECT BUILD-OUT

## 2.6.1 Structures and Facilities Required

### 2.6.1.1 Solar Facility

Facility details would vary depending on the final design. The solar facility would consist of solar arrays arranged in a grid pattern that is adapted to the landscape. Solar panels would be placed on modular piers with associated racking. The typical solar facility consists of the following components, as described in more detail below:

- PV arrays
- Onsite substations/switchyards
- Upgrades required to offsite substations to interconnect the project to the electrical grid
- Permanent services and warehouse buildings
- Multiple laydown areas located throughout the solar facility site
- Installation of an energy storage facility and appurtenances that would provide energy storage capacity for the electric grid
- Associated roads, fencing, and drainage facilities

#### **Solar PV Arrays**

An array is an aggregation of PV panels that captures sunlight and converts it directly to generate an electric current (direct current [DC]). If a full 750 MW of energy were to be produced, an estimated two million panels would be installed to implement the Proposed Action.

The panels would be mounted on vibratory pile-driven piers or concrete foundation footings, if piles cannot be driven. The panels would be installed using either a single-axis tracking system, whereby the panels are controlled to move with the sun, or on a fixed-tilt system, whereby the panels are fixed at a particular angle. For either configuration, it is likely that most of the pipe pile foundations would be driven to depths of up to 18 feet. When piles cannot be driven to the required depth, an alternative spread footing detail would be required; these footings may be up to 6 feet wide by 6 feet long and 2 feet deep. The PV panels, at their highest point, would not exceed 12 feet above the ground surface and, at their lowest point, would likely be approximately 30 inches above the ground surface.

#### **On-Base Substations**

The solar facility site would include on-base substations. Each substation would step up the generation voltage from 34.5 kV to 230 kV for off-base transmission. Each substation would contain a control building with an attached battery room and standard substation equipment. Each on-base substation would not exceed 1.5 acres in size. Substation equipment would generally be between 15 and 35 feet tall, with the exception of the transmission tower, which would be a maximum of 60 feet in height, and a lightning protection mast, which would not exceed 75 feet in

1 height (transmission tower plus 15 feet).<sup>1</sup> The number of substations will be determined by project  
2 phasing, but will not be greater than five.

### 3 **Energy Storage Facilities**

4 Energy Storage Facilities would either be distributed throughout the facility or centralized adjacent  
5 to the onsite substations. The energy storage system is proposed to provide a maximum capacity of  
6 1gigawatt hour (GWh). If distributed, the energy storage batteries would be housed in container  
7 boxes, or trailers located adjacent to inverters throughout the site. If centralized, the energy storage  
8 batteries would be housed in a structure, container boxes, or trailers, and would be located on  
9 approximately 20 acres of the EUL. The height of the structure, box, or trailer would be  
10 approximately 30 feet. The batteries would be housed in racking (similar to computer racking) 10  
11 to 12 feet high, to allow efficient airflow between the batteries. The associated inverters,  
12 transformers, and switchgear would be located immediately adjacent to the energy storage facilities  
13 on concrete pads outdoors. The energy storage technology has not been determined at this time, but  
14 could entail any commercially available battery technology, including but not limited to lithium  
15 iron, lead acid, sodium sulfur, and sodium or nickel hydride. Battery systems are operationally  
16 silent.

### 17 **Power Conversion and Fiber Optic Lines**

18 The DC power generated by the PV panels would be delivered along an underground trench system  
19 located between each row of PV panels. It is assumed that these trenches would not exceed 3 feet  
20 in depth, or approximately 5 feet in width. The DC power for each array would be routed to a 12-  
21 foot-wide, 30-foot-long, and 12-foot-tall metal clad electrical enclosure mounted on concrete  
22 foundation pads where an inverter and transformer would be located. The inverters within the  
23 electrical enclosures convert the DC power to alternating current (AC) and the medium voltage  
24 transformers would increase the voltage to 34.5 kV, which is the level required for collection. All  
25 electrical equipment would be either outdoor rated or mounted within the electrical enclosures  
26 designed specifically for outdoor installation to avoid electrical shock risks to humans and wildlife.

27 The transformers would be connected in parallel circuits, to deliver AC power along underground  
28 trenches to up to three onsite substations. The trenches would be approximately 4 feet deep and up  
29 to 5 feet wide (including the trench and disturbed area). These trenches may also contain a fiber  
30 optic cable.

31 The final size of each subarray would be determined during final design. For example, a 2 MW  
32 subarray, including the PV panels and associated electrical enclosure, would occupy approximately  
33 10 acres for a fixed-tilt configuration and up to 15 acres for a tracker configuration.

### 34 **Project Switchyard**

35 The project switchyard is where the voltage from the substations would be combined before being  
36 routed via the 230 kV gen-tie line to the privately owned Westwind Substation and the SCE  
37 Windhub Substation. The switchyard contains standard switching, metering, and voltage protection  
38 equipment. Switchyards require dead-end structures to resist the pulls from phase conductors and

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<sup>1</sup> This is a generalized substation description; actual development concepts may vary slightly.

1 shielding wires. These structures would not exceed 80 feet in height. The project switchyard would  
2 also require lightning protection masts, which would not exceed 95 feet in height.

### 3 ***Operation and Maintenance Facilities (Service Buildings and Warehouses)***

4 Warehouse and administrative buildings may be constructed to support full-scale operations within  
5 the project site. A smaller-scale project would require less overall space. These buildings would  
6 include paved parking lots and septic systems.

### 7 ***Site Access Roads***

8 Access to the solar facility would be from Lone Butte Road. In addition, the solar facility would  
9 contain an internal, permanent, unpaved roadway system that would include perimeter roads  
10 surrounding the facility, as well as a network of roads between subarrays. These roads would  
11 provide access for operation and maintenance activities and would consist of existing onsite  
12 materials or a blend of existing and imported materials (e.g., gravel) that would be compacted.

### 13 ***Site Security Fencing***

14 To ensure the safety of the public and to maintain site security, the solar facility would be secured  
15 with chain-link fencing topped with barbed wire. Access to the solar facility would be controlled,  
16 and gates would be installed to provide the required access to the site. The site would also have  
17 closed-circuit television that would be monitored from a remote location. The Developer would be  
18 responsible for monitoring the site security fencing and closed-circuit television for the project.

### 19 ***Drainage Facilities***

20 Localized grading would be performed throughout the project site to facilitate proper drainage. The  
21 drainage facilities have yet to be designed. Earthworks scrapers, paddlewheels, haul vehicles, and  
22 graders may all be used to perform localized grading, as needed in areas that require compacted  
23 soils (e.g., substation pad site, inverter shelters, roads). Earthwork is not anticipated within the solar  
24 arrays where vibratory piles are placed for solar tracking. The project would employ disk-and-roll  
25 grading to maintain the general slopes and topography of the site as feasible. Perimeter and access  
26 roads may be additionally compacted to 90 percent or greater, as required to support construction  
27 and emergency vehicles. The grading would be balanced onsite.

## 28 **2.6.1.2 Gen-Tie and Telecommunication Lines**

29 Power would be carried from the solar facility to the privately owned Westwind Substation and the  
30 SCE Windhub Substation via a 230 kV gen-tie line. One to four circuits and also fiber optic  
31 communications lines would be installed. The selected gen-tie line route would be constructed on  
32 one set of steel monopoles for the majority of the route, with some H-frame structures as needed.  
33 Pole height would likely range between 100 and 180 feet, and would not to exceed 200 feet. The  
34 gen-tie line would travel overhead for the majority of the route but may be installed underground  
35 in certain sections where necessary due to physical or commercial constraints. Fiber optic  
36 communication cables would run parallel with the gen-tie line. Foundation sizes for the gen-tie  
37 poles would be approximately 6 to 12 feet in diameter and 20 to 40 feet deep. The gen-tie poles  
38 would be set within the poured concrete foundations or via direct-bury methods.

1 Where the gen-tie route includes one set of poles, the maximum width of the ROW associated with  
2 the gen-tie line would be 120 feet. The width of disturbance includes approximately 50 feet  
3 associated with temporary disturbance for access, pulling conductor, and staging materials. The  
4 gen-tie line may also share ROWs with existing public and private transmission lines where  
5 technically and commercially feasible.

6 It is estimated that implementation of the Proposed Action would require the installation of  
7 approximately 11 poles per mile for the off-base portion of the gen-tie line. All poles would be  
8 designed to be avian-safe in accordance with the Avian Power Line Interaction Committee's  
9 (APLIC) suggested practices as identified in *Suggested Practices for Avian Protection on Power*  
10 *Lines: The State of the Art in 2006* (APLIC, 2006).

### 11 **Interconnection Upgrades**

12 Upgrades required to interconnect the proposed solar facility to the transmission grid include  
13 installation of new transmission equipment, such as circuit breakers, switches, bus supports,  
14 breaker management relays, insulator/hardware assemblies, telecommunications equipment, and  
15 spans of conductors between the last Developer-owned structure and the interconnection point.

## 16 **2.6.2 Construction**

### 17 **2.6.2.1 Workforce and Schedule**

18 The construction worker population would consist of laborers, electricians, supervisory personnel,  
19 support personnel, and construction management personnel. The final count of construction  
20 workers that would be required for construction of the solar facility would be determined after the  
21 facility layout and capacity is determined. The construction workforce may consist of as many as  
22 100 to 550 daily workers, with approximately 1,250 temporary workers employed during project  
23 construction. Construction work would generally occur during daylight hours, Monday through  
24 Friday. Non-daylight work hours may be necessary, subject to the Kern County Noise Ordinance  
25 Chapter 8.36, to make up schedule deficiencies or to complete critical construction activities,  
26 including activities that cannot be completed during daylight. For instance, during hot weather it  
27 may be necessary to start work earlier to avoid pouring concrete during high ambient temperatures.  
28 Any construction work performed outside of the normal work schedule would be coordinated with  
29 the appropriate agencies and would conform to the Kern County Noise Ordinance (Chapter 8.36).  
30 It is anticipated that the construction workforce would commute to the site each day from local  
31 communities. Construction staff not drawn from the local labor pool would stay in any of the local  
32 hotels in Rosamond, Lancaster, or other local cities.

33 Construction of the Proposed Action is anticipated to last 2 years; however, actual development of  
34 the project site is dependent on market conditions upon project approval.

### 35 **2.6.2.2 Water Supply**

36 It is estimated up to 200 acre-feet per year (AFY) of water may be required during the 2-year  
37 construction period to support concrete manufacturing, dust control, and sanitation. To the extent

1 available, tertiary treated water for non-potable uses would be obtained from the Rosamond  
2 Community Services District or would be trucked to the site.

### 3 **2.6.2.3 Solar Facility**

#### 4 ***Site Preparation***

5 Site preparation would begin by clearing existing vegetation, to the extent necessary, and grading  
6 the areas proposed for the main permanent access road to the project site and the permanent pad  
7 sites for inverters. Vegetation clearing and removal operations would be undertaken using mowers,  
8 graders, skip loaders, chippers, and dump trucks. Areas proposed for the service buildings and  
9 warehouses and their associated parking lots, as well as the proposed switchyard location and onsite  
10 substation locations, would also be cleared and graded. These areas would be disked and rolled and  
11 compacted; because of the flat topography, the amount of grading to construct these structures is  
12 anticipated to be minimal. Initial site preparation activities would also include installation of  
13 fencing along the solar facility boundary.

14 Because of the flat topography of the project site, it is anticipated that minimal grading would be  
15 required to prepare the site for PV modules. The PV module piers also allow for installation on  
16 uneven ground, reducing the need for grading. To the extent possible, existing topsoil would be left  
17 in place. However, it is anticipated that vegetation would need to be removed as a result of trenching  
18 and other construction activities.

#### 19 ***Temporary Staging and Laydown Areas and Temporary Buildings***

20 Equipment and material staging areas would be established during site preparation. Multiple  
21 temporary staging and laydown areas would be located throughout the solar facility to support final  
22 assembly and installation. Temporary assembly buildings and construction trailers would be  
23 installed onsite to assemble the PV subarrays and for other construction activities, and would likely  
24 be located near the warehouse and services buildings.

25 Temporary holding locations for construction debris and waste would be established near the  
26 substation and laydown areas. A local licensed disposal company would be contracted to haul and  
27 properly dispose of the refuse. Recyclable items would be staged and disposed of separately, and  
28 hazardous materials would be handled in accordance with all laws and regulations.

#### 29 ***Solar Array Assembly***

30 Erection of the solar arrays would include support structures and associated electrical equipment.  
31 First, steel piles would be driven into the soil using pneumatic techniques, similar to a hydraulic  
32 rock hammer attachment on the boom of a rubber-tired backhoe excavator. If hollow bedrock, or  
33 other obstructions are encountered, the pile locations would be predrilled and then grouted in place  
34 with concrete. The piles are typically spaced approximately 10–20 feet apart. Once the piles have  
35 been installed, the horizontal array support structures would be installed. The final design of the  
36 horizontal array support structures may vary, depending on the final election of the PV technology,  
37 as well as whether a fixed tilt or tracking system is selected. Once the support structures are  
38 installed, workers would begin to install the solar modules. Solar array assembly and installation  
39 would require trenching machines and excavators, compactors, concrete trucks and pumps,

1 vibrators, forklifts, boom trucks, graders, pile drivers, drilling machines, and cranes. Concrete may  
2 be required for portions of the footings, and pads for the medium voltage transformers, inverters,  
3 operation and maintenance buildings, battery storage and communications building. Concrete may  
4 also be required for pile foundation support depending on the proposed mounting system chosen  
5 for installation and whether or not obstructions are encountered when trying to drive piles. Final  
6 concrete specifications would be determined during detailed design engineering. Concrete may be  
7 produced on the project site and would be poured throughout the sites by truck, or purchased from  
8 an offsite supplier and trucked into the project.

9 During this work, there would be multiple crews working on the site with vehicles, including  
10 special vehicles for transporting the modules and other equipment. As the solar arrays are installed,  
11 the solar switchyard would be constructed and the electrical collection and communication systems  
12 would be installed.

### 13 **Temporary Power**

14 Temporary power for solar facility construction would be provided by mobile diesel-driven  
15 generator sets and/or by temporary electrical service from the local power provider. The diesel  
16 generators and construction equipment (backhoes, grader, tractor, etc.) would be registered with  
17 the California Air Resources Board (CARB) Portable Equipment Registration Program (PERP) or  
18 Diesel Offroad Online Reporting System (DOORS).

### 19 **2.6.2.4 Gen-Tie Line Construction**

20 Site preparation would include clearing existing vegetation in the proposed pole locations,  
21 including their ground lines, trenching locations, access roads, areas for guard structures, and  
22 stringing areas. Approximately 150 acres of disturbed and undisturbed lands would be graded or  
23 otherwise disturbed for construction of the gen-tie line; however, permanent impacts would be  
24 approximately 25 acres. Vegetation in all of these areas, except for the access roads, would be  
25 reseeded with a seed stock comprising local, native species. Vegetation in the temporary staging  
26 and laydown areas would be trampled but not cleared; these areas would be reseeded as well.  
27 Selective vegetation clearing may also be necessary to provide for line clearance.

28 Foundations for the gen-tie poles would be installed prior to erection of the poles. Pole installation  
29 would then occur sequentially along the route to the extent practical. A buried fiber-optic  
30 telecommunication line may follow the transmission line route to provide for communication  
31 between the project substation and the interconnection to the grid.

32 For certain sections of the gen-tie route, the gen-tie line may be installed underground with the  
33 fiber-optic cables. Installation of underground facilities would require the use of such equipment  
34 as trenchers, backhoes, excavators, haul vehicles, compaction equipment, directional drills, and  
35 water trucks. Structures for the gen-tie line and conductor support hardware would be assembled  
36 at a temporary staging area at each pole location to minimize damage during transport. In addition,  
37 areas of disturbance would be required in certain locations along the gen-tie route in order to string  
38 the lines. During construction of the gen-tie line across existing roads or structures, temporary  
39 guard structures may be installed on either side of the crossing to maintain vertical clearance during  
40 construction. Guard structures are installed at locations such as road crossings, flood control

1 facilities, and utility crossings. Guard structures would protect underlying areas during wire-  
2 stringing operations. The guard structures intercept the wire should it drop below a conventional  
3 stringing height, preventing damage or interference to underlying structures. These guard structures  
4 would be temporary and be removed after conductor installation is complete.

5 Because it is anticipated that the gen-tie line would primarily follow existing roads, main access to  
6 the gen-tie route would be via these roads. However, new temporary unpaved access roads may  
7 need to be installed to access the laydown areas for each pole and where the gen-tie line is installed  
8 underground. They would also be used to access the poles for future maintenance activities. The  
9 maintenance roads would be maintained at a width of 22 feet and be up to 30 feet wide during  
10 construction.

### 11 ***Temporary Staging and Laydown Areas***

12 Structures for the gen-tie line and conductor support hardware would be assembled at each pole  
13 location to minimize damage during transport. Construction of the gen-tie line would require an  
14 approximate area of 50 feet by 50 feet at each pole location, for use as temporary laydown or staging  
15 areas for equipment, poles, and hardware. In addition, approximately two laydown/assembly areas  
16 are anticipated, which will result in 5 acres of disturbance.

### 17 ***Stringing Areas***

18 In addition to the temporary staging and laydown areas described above, additional areas of  
19 disturbance would be required in certain locations along the gen-tie line route in order to string the  
20 lines. Specifically, approximately 41 acres of temporary disturbance would occur along the route  
21 where there are large angles in the alignment, at all dead-end structures, and at other strategic  
22 locations, in order to accommodate equipment required for wire pulling and tensioning in these  
23 areas.

### 24 ***Guard Structures***

25 During construction of the gen-tie line across existing roads, temporary guard structures would  
26 need to be installed on either side of the crossing to maintain vertical clearance during construction.  
27 Guard structures are installed at locations such as road crossings, flood control facilities, and utility  
28 crossings. Guard structures would protect underlying areas during wire stringing operations. They  
29 intercept wire should it drop below a conventional stringing height, preventing damage or  
30 interference to underlying structures. These guard structures would be temporary and would be  
31 removed after conductor installation is complete. Each guard structure would disturb an  
32 approximately 100-foot by 100-foot area (10,000 square feet).

### 33 ***Roads***

34 Because it is anticipated that the gen-tie line would primarily follow existing roads, main access to  
35 the gen-tie route would be via these roads. However, new unpaved access roads would need to be  
36 installed to access the laydown areas for each pole, and where the gen-tie line is installed  
37 underground. These access roads would be maintained at 22 feet wide and would be up to 30 feet  
38 wide during construction. They would also be used to access the poles for future maintenance  
39 activities.

### 1 **2.6.2.5 Design Features and Best Management Practices**

#### 2 ***Dust Control, Erosion Control, and Water Quality Protection Measures***

3 Construction would commence after a Storm Water Pollution Prevention Plan (SWPPP)  
4 incorporating best management practices (BMPs) for runoff and erosion control has been prepared.  
5 Site-specific BMPs would be designed by the contractor in compliance with regulations and permit  
6 conditions. The Proposed Action would also comply with applicable post-construction water  
7 quality requirements adopted by the Regional Water Quality Control Board (RWQCB-Lahontan  
8 Region). Areas disturbed as a result of construction activities would be stabilized to minimize wind  
9 and water erosion, and generation of fugitive dust, by watering and/or the use of dust palliatives or  
10 tackifiers. Chipped mulch created as a result of selective vegetation removal may also be spread  
11 onsite for this purpose as appropriate. No construction would commence until after a Dust Plan and  
12 permit to operate from the Eastern Kern Air Pollution Control District (EKAPCD) is approved.  
13 The Dust Plan will address Reasonable Available Control Measures for dust control, including  
14 limiting work when wind speed is over 20 miles per hour and keeping soil damp while performing  
15 earthwork.

#### 16 ***Solid Waste Management***

17 Solid waste generated from construction activities may include paper, wood, glass, plastics from  
18 packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous  
19 containers, and vegetation wastes. These wastes would be segregated, where practical, for  
20 recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular  
21 basis by a certified waste-handling contractor for disposal at a Class III landfill. Vegetation wastes  
22 generated by site clearing and grubbing would be chipped/mulched and spread onsite or hauled  
23 offsite to an appropriate “green” waste facility.

#### 24 ***Hazardous Materials and Hazardous Waste Management***

25 The hazardous materials used for construction would be typical of most construction projects of  
26 this type. Such materials would include small quantities of gasoline, diesel fuel, oils, lubricants,  
27 solvents, detergents, degreasers, paints, ethylene glycol, and welding materials/supplies. Small  
28 quantities of hazardous wastes would likely be generated over the course of construction. These  
29 wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags,  
30 waste batteries, and spent welding materials. Hazardous materials management and hazardous  
31 waste management during construction activities would follow the requirements of the Hazardous  
32 Materials Management Process (HMMP) and Hazardous Waste Management Plan for Edwards  
33 AFB.

### 34 **2.6.3 Operation and Maintenance**

35 Once placed into service, the solar facility would operate during daylight hours, when there is  
36 sufficient sunlight for operation of the solar field.

37 Maintenance performed on the site would consist of equipment inspection and replacement in  
38 accordance with manufacturer recommendations. Maintenance activities would occur primarily

1 during daylight hours. Maintenance activities would also include washing the PV panels, as  
2 described in more detail below.

3 The exact vehicles that would be required for operation and maintenance of the solar facility would  
4 be determined after the facility design is finalized. Operation and maintenance vehicles would  
5 likely include trucks (pickups, flatbeds, dump trucks), forklifts, and loaders for routine and  
6 unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport  
7 equipment may be brought to the site, as needed, for equipment repair or replacement. A minimal  
8 amount of equipment would be stored onsite in equipment enclosures. Construction equipment  
9 (backhoes, grader, tractor, etc.) must be registered with CARB PERP or DOORS. Vehicle fleet  
10 must conform to CARB emission standards, including the no-idling rule.

### 11 **2.6.3.1 Workforce**

12 The total amount of staff required for operation and maintenance is expected to be up to 10 full-  
13 time personnel for operation, maintenance, and security of the solar facility. Additional personnel  
14 would conduct operations from an offsite location. Additional maintenance and security personnel  
15 would be dispatched to the solar facility, as needed.

### 16 **2.6.3.2 Electrical Supply**

17 The solar facility would require power for the electrical enclosures, substation equipment, tracker  
18 motors, service buildings, warehouses, and plant lighting and security. Power for these solar facility  
19 auxiliaries would be provided by the solar facility's electrical generation or supplied by the local  
20 power provider. Substation protection equipment would be supplied by DC power provided by each  
21 substation control building's battery room. There may also be emergency generators located onsite  
22 as a backup source; however, such emergency generators may only be needed during construction  
23 and could be removed during operation. Emergency backup generators will need a permit to operate  
24 with EKAPCD if not removed within 12 months.

### 25 **2.6.3.3 Lighting**

26 The lighting system for the solar facility would provide operation and maintenance personnel with  
27 illumination for both normal and emergency conditions. Lighting would be designed to provide the  
28 minimum illumination needed to achieve safety and security objectives. Lighting would be directed  
29 downward and shielded to focus illumination on the desired areas only. Lighting would be provided  
30 at the electrical enclosures, onsite buildings, and the main access road entrance. Lighting would be  
31 limited so that light spillover on the adjacent properties would be minimal. If lighting at individual  
32 solar panels or other equipment is needed for night maintenance, portable lighting would be used.

### 33 **2.6.3.4 Water Use**

34 Water for operation of the solar facility would consist primarily of water consumed by panel  
35 washing processes and small quantities used for dust mitigation. Water is anticipated to be trucked  
36 to the project site for operations, with 30 AFY provided by Mojave Public Utility District. The  
37 Developer would be responsible for purchasing and providing water for the project.

1 Operation of the project would use up to 30 AFY of water. It is assumed that panel washing would  
2 require approximately 1 gallon of water per panel, and that each panel would need to be washed up  
3 to four times per year to maintain solar panel operating efficiency, resulting in a demand of  
4 approximately 25 AFY. Operational decisions regarding panel washing would be made based upon  
5 real-time conditions and there may be years in which no washing is required. Depending on the  
6 amount of building square feet (that would be relative to the size of the solar facility), up to 5 AFY  
7 of water may be needed annually to supply water to service buildings and warehouses for showers,  
8 bathrooms, and drinking water for onsite employees.

### 9 **2.6.3.5 Wastewater Generation**

10 Wastewater generated would include sanitary waste handled via onsite septic systems, stormwater  
11 runoff, and panel washdown water. Sanitary waste would be handled via onsite septic systems for  
12 the services buildings and warehouses. Stormwater runoff would be collected via an onsite drainage  
13 system that has not yet been designed. Finally, panel washdown water would be discharged to  
14 grade.

### 15 **2.6.3.6 Fire Protection**

16 The project would comply with all Kern County Fire Code requirements. The PV panels and  
17 ancillary equipment represent a negligible increase in fire potential. For the offsite gen-tie line,  
18 clearances for vegetation would be implemented in accordance with California Public Utility Code  
19 General Order 95 (Rules for Overhead Electric Line Construction).

### 20 **2.6.3.7 Solid Waste Management**

21 Operation of the solar facility would produce a small amount of nonhazardous solid waste. This  
22 would include refuse generated by workers and office operations such as rags, scrap metal, packing  
23 materials from deliveries, and empty containers. Solid waste would be recycled to the maximum  
24 extent possible.

### 25 **2.6.3.8 Hazardous Materials Use and Management**

26 Limited quantities of hazardous materials would be used and stored for operation and maintenance  
27 activities. These materials would include oils, lubricants, paints, solvents, degreasers and other  
28 cleaners, and transformer mineral oil. Transformer mineral oil would be stored at the onsite  
29 substations; all other hazardous materials would be stored in the warehouses.

30 Mineral oil may be stored at the solar facility. Each of the two generation step-up transformers at  
31 the onsite substations may contain dielectric fluid (mineral oil) on a concrete pad surrounded by an  
32 earthen, fiberglass, or concrete containment berm/curb. The containment area would be lined with  
33 an impermeable membrane covered with gravel, and would drain to an underground storage tank.  
34 The onsite substations would have a comprehensive Spill Prevention, Control, and Countermeasure  
35 Plan in accordance with State and federal regulations. Any stormwater or fluid drained to the tank  
36 would be inspected for a sheen prior to disposal. If a sheen is observed, the tank contents would be  
37 removed by vacuum truck to an appropriate disposal site. If no sheen or contaminants are detected,  
38 the stormwater would be drained onsite.

1 Any hazardous materials would be stored in appropriate storage locations and containers.  
2 Flammable materials, such as paints and solvents, would be stored in nonflammable material  
3 storage cabinets with built-in containment sumps. An HMMP would be developed for project  
4 operation in compliance with the HMMP for Edwards AFB and the Kern County Fire Department  
5 prior to turnover of the site from construction to operation.

#### 6 2.6.4 Decommissioning, Lease Renewal, and Upgrades

7 The Developer intends to sell the renewable energy produced by the project for the term of the EUL  
8 with the Air Force. Upon completion of the 35-year lease, the Developer may seek to extend the  
9 EUL with the Air Force or decommission and remove the system and its components. Prior to  
10 decommissioning, a decommissioning environmental impact analysis will be completed to assess  
11 how all site improvements should be dismantled and removed from the site consistent with the  
12 lease. Upon decommissioning, the solar site could be converted to other uses in accordance with  
13 regulations in effect at that time.

14 It is anticipated that during decommissioning, project structures would be removed from the site.  
15 Aboveground and below ground equipment that would be removed include module posts and  
16 support structures, onsite transmission poles that are not shared with third parties and the overhead  
17 collection system within the project site, inverters, transformers, battery storage containers,  
18 electrical wiring, equipment on the inverter pads, and related equipment and concrete pads. The  
19 substation would be removed if it is owned by the project; however, if a public or private utility  
20 assumes ownership of the substation, the substation may remain onsite to be used as part of the  
21 utility service to supply other applications. Project roads would be restored to their preconstruction  
22 condition unless the landowner elects to retain the improved roads for access throughout that  
23 landowner's property. The area would be thoroughly cleaned and all debris removed. As discussed  
24 above, most materials would be recycled to the extent feasible, with minimal disposal to occur in  
25 landfills in compliance with all applicable laws.

26 A collection and recycling program would be executed to promote recycling of project components  
27 and minimize disposal of project components in landfills. All decommissioning and restoration  
28 activities would adhere to the requirements of the appropriate governing authorities and would be  
29 in accordance with all applicable federal, state, and county regulations. The Developer expects a  
30 secondary market for PV modules to develop over time. Although energy output may diminish, the  
31 PV modules are expected to continue to have a productive life and can be decommissioned from a  
32 prime location or recommissioned in another location.

### 33 2.7 Environmental Comparison of Alternatives

34 **Table 2-3 Comparison of Alternatives**, presents a comparison of the differences in impacts  
35 among the alternatives described in Section 2.5.1. The information in Table 2-3 is derived from the  
36 detailed discussions of the existing environmental conditions and environmental consequences in  
37 Chapter 3 of this Draft EIS/EIR, as well as the technical studies and other material presented in the  
38 appendices.

**TABLE 2-3  
COMPARISON OF ALTERNATIVES**

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
<b>Aesthetics</b>	<p>Indirect impacts as a result of dust clouds generated from construction grading activities.</p> <p>Direct impacts to visual resources.</p> <p>Direct impacts to visual resources during decommissioning.</p>	<p>Similar, but reduced impacts to visual resources as Alternative B would only require one-third of the area.</p>	<p>No impacts to visual resources in the Proposed Action area.</p>	<p>Reduced aesthetic impacts as installation of panels on large rooftops would be visually unobtrusive or unnoticed at ground level.</p>
<b>Air Quality</b>	<p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (first calendar year)</p> <p>ROG = 1.39 / 50 NOx = 11.89 / 50 CO = 15.51 / 100 SOx = 0.04 / 100 PM<sub>10</sub> = 9.98 / 70 PM<sub>2.5</sub> = 1.54 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (second calendar year)</p> <p>ROG = 2.57 / 50 NOx = 23.31 / 50 CO = 29.82 / 100 SOx = 0.08 / 100 PM<sub>10</sub> = 17.57 / 70 PM<sub>2.5</sub> = 2.83 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (third calendar year)</p> <p>ROG = 1.21 / 50 NOx = 11.43 / 50 CO = 14.93 / 100 SOx = 0.04 / 100 PM<sub>10</sub> = 9.88 / 70 PM<sub>2.5</sub> = 1.53 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p>	<p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (first calendar year)</p> <p>ROG = 0.58 / 50 NOx = 5.05 / 50 CO = 6.62 / 100 SOx = 0.02 / 100 PM<sub>10</sub> = 3.77 / 70 PM<sub>2.5</sub> = 0.61 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Construction Emissions / <i>De Minimis</i> Level Units tons/year (second calendar year)</p> <p>ROG = 0.53 / 50 NOx = 5.01 / 50 CO = 6.55 / 100 SOx = 0.01 / 100 PM<sub>10</sub> = 3.78 / 70 PM<sub>2.5</sub> = 1.45 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Operational: Emissions / <i>De Minimis</i> Level Units tons/year</p> <p>ROG = 0.16 / 50 NOx = 0.12 / 50 CO = 0.10 / 100 SOx = 0.00 / 100 PM<sub>10</sub> = 0.02 / 70 PM<sub>2.5</sub> = 0.01 / 100</p> <p><b>Does not exceed <i>De Minimis</i> Level</b></p>	<p>No impacts to air quality.</p> <p>If Alternative A is not built, then approximately 656,752 metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>e) per year of emissions from electricity generated by fossil fuel sources would not be reduced by renewable electricity from solar energy production.</p>	<p>Reduced impacts to air quality as no construction activities or ground disturbance would occur.</p> <p>Construction emissions related to delivery of materials and workers would be similar to or greater than Alternative A.</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
	<p>Operational Emissions / <i>De Minimis</i> Level Units tons/year                      ROG = 0.23 / 50                      NOx = 0.31 / 50                      CO = 0.24 / 100                      SOx = 0.00 / 100                      PM<sub>10</sub> = 0.06 / 70                      PM<sub>2.5</sub> = 0.02 / 100  <b>Does not exceed <i>De Minimis</i> Level</b></p> <p>Decommissioning                      Comparable in type and magnitude, but likely to be lower than the construction emissions, and not expected to violate national or state ambient air quality standards.</p>	<p>Decommissioning:                      Comparable in type and magnitude, but likely to be lower than the construction emissions.</p>		
<b>Airspace Management and Use</b>	<p>Less than significant impacts with regard to consistency with the ALUCP, air traffic levels or patterns, safety or operational hazards to aircraft, and glint and glare assessments.</p>	<p>Similar, but reduced impacts due to a smaller area of disturbance.</p>	<p>No impact related to consistency with the ALUCP and air safety hazards, air traffic levels or patterns, safety or operational hazards to aircraft, and glint and glare assessments</p>	<p>Reduced impacts as a construction of a gen-tie line is not required.                      Reduced impacts with regard to glint and glare.</p>
<b>Biological Resources</b>	<p>Direct impact to removing a maximum of 4,150 acres of general non-sensitive vegetation and wildlife resources.                      Direct and indirect impacts to special-status plant species.                      Direct impacts to special-status (federal and state) wildlife species.                      Direct impacts to sensitive habitats, including Joshua tree woodlands and wildlife movement corridors.</p>	<p>Similar but reduced potential impacts to special-status plants and wildlife with regard to a smaller amount of construction-related ground disturbance.</p>	<p>No impacts to onsite conditions or existing biological resources, including general vegetation and wildlife resources, special-status plants, special-status wildlife, and sensitive habitats.</p>	<p>Reduced impacts to biological resources as installation of solar panels would occur on currently developed areas.</p>
<b>Cultural and Paleontological Resources</b>	<p>Direct impacts to known and unknown cultural resources, archaeological resources, paleontological resources, and historical resources.                      Indirect impacts during routine operation and maintenance activities on cultural resources.</p>	<p>Similar but reduced impacts to cultural resources, archaeological resources, paleontological resources, and historical resources due to reduced physical development of the site.</p>	<p>No impacts to cultural or paleontological resources at the project site.</p>	<p>Reduced impacts to cultural resources as only previously developed areas would be modified.</p>
<b>Geology and Resources</b>	<p><b>Soil</b>                      Within the project site, there is an absence of any known active faults that cross or come anywhere near the project</p>	<p>Similar but reduced potential for adverse soil conditions; similar potential for ground subsidence or seismic-related ground failures.</p>	<p>No impacts to geology, minerals, or soils.</p>	<p>Reduced impacts to geology and soils as it would not require in-ground construction and minimally expose people to geologic or seismic hazards.</p>

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
	<p>site; ergo, there would be no adverse effects related to fault rupture.</p> <p>The site is not located in an area undergoing fluid withdrawal that could generate a potential subsidence effect.</p> <p>Construction of the proposed project would involve earthwork activities that could expose soils to erosion.</p>	<p>Reduced potential for erosion due to smaller site.</p>		
<b>Greenhouse Emissions</b>	<p><b>Gas</b> Construction Emissions / CEQ Level Units tons/year (first calendar year) CO<sub>2</sub>e = 3,790.26 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (second calendar year) CO<sub>2</sub>e = 7,608.45 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (third calendar year) CO<sub>2</sub>e = 3,945.72 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Operational Emissions / CEQ Level Units tons/year CO<sub>2</sub>e = 3,948.65 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Decommissioning</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions, and not expected to violate national or state ambient air quality standards.</p>	<p>Construction Emissions / CEQ Level Units tons/year (first calendar year) CO<sub>2</sub>e = 3,782.10 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Construction Emissions / CEQ Level Units tons/year (second calendar year) CO<sub>2</sub>e = 1,902.28 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Operational: Emissions / CEQ Level Units tons/year CO<sub>2</sub>e = 1,473.01 / 25,000 <b>Does not exceed CEQ Level</b></p> <p>Decommissioning:</p> <p>Comparable in type and magnitude, but likely to be lower than the construction emissions.</p>	<p>No generation of GHG emissions that would cause any impact to global climate change.</p> <p>Since Alternative A would not be built, approximately 656,752 MT CO<sub>2</sub>e per year of emissions from electricity generated by fossil-fuel sources would not be reduced by renewable electricity from solar energy production.</p>	<p>Impacts would be similar to, or greater than, Alternative A, because the GHG emissions from delivery of materials and workers would travel to greater distances at which construction sites would be located.</p>
<b>Hazards and Hazardous Materials</b>	<p>Potential impacts from the accidental release of hazardous materials during construction, maintenance and decommissioning.</p>	<p>Similar but reduced likelihood of accidental release of hazardous materials used onsite or potential due to smaller site and shorter construction time.</p>	<p>No impacts related to the accidental release of hazardous materials.</p>	<p>Reduced impacts as no construction activities would occur that could potentially disturb hazardous materials.</p>
<b>Infrastructure</b>	<p>Construction period would require up to 200 AFY of water to support concrete manufacturing, dust control, and sanitation.</p> <p>No impacts to electrical, natural gas, or other utility lines.</p>	<p>Similar but reduced usage of water and wastewater during construction due to the reduced size of the facility.</p>	<p>No impact to water supplies or generation of wastewater or solid waste.</p>	<p>Reduced impact as solar equipment installed on existing structures would not require new, in-ground construction.</p>

<b>Resource</b>	<b>Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)</b>	<b>Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)</b>	<b>Alternative C: No Action / No Project</b>	<b>Alternative D: Rooftop Solar (CEQA Alternative only)</b>
	<p>Operation activities would require up to 30 AFY.</p> <p>A septic system would be needed to dispose of wastewater.</p> <p>Solid waste generated would not exceed the capacity of the Rosamond Landfill.</p>			
<b>Land Use</b>	No conflict with FAR regulations, Edwards AFB Installation Development Plan, Kern County General Plan, and West Edwards Road Settlement Specific Plan.	Similar impacts to Alternative A.	No impact to applicable land use plans, policies, and regulations.	Similar impacts to Alternative A.
<b>Noise</b>	<p>Construction and decommissioning: maximum noise level generated would be 93 dBA at 50 feet from noise source, or 87 dBA from nearest sensitive receptor.</p> <p>Operation and maintenance would not result in any activities that would generate substantial temporary or periodic increases in ambient noise levels.</p>	Reduced noise impacts due to the reduced size of the facility and siting further from the nearest sensitive receptor, and shorter construction timeframe.	No impact to noise levels associated with construction, operation and maintenance, and decommissioning.	Greater impacts as construction noise could occur adjacent to residences, which would result in impacts to a larger number of sensitive receptors.
<b>Public Services</b>	Increase in truck and employee traffic on haul routes during construction and operation could increase impacts on fire protection and police protection services.	Similar but reduced as this Alternative would require fewer construction workers and operations staff.	No impact to fire and police protection services.	Reduced impacts as this Alternative would not increase demand of public services.
<b>Socioeconomics</b>	<p>Construction workforce consists of 100 to 450 daily workers, which would generate an estimated 779 jobs over the 2-year construction period.</p> <p>Operation and maintenance would require approximately 10 full-time personnel.</p>	Similar but reduced impacts as this Alternative would require fewer workers and a reduction in the duration of construction. It would also require fewer full-time employees during operation and maintenance due to the smaller size of the facility.	No impact to employment and economic benefits.	
<b>Environmental Justice</b>	There are no communities of concern in the study area; therefore, the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and regional communities of concern, including minority or low-income populations.	There are no communities of concern in the study area; therefore, there the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and regional communities of concern, including minority or low-income populations.	No impact on local and regional communities of concern, including minority or low-income populations.	There are no communities of concern in the study area; therefore, the project would not result in human health and environmental adverse effects that would cause disproportionately high and adverse impacts on local and regional communities of concern, including minority or low-income populations.

Resource	Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)	Alternative B: Reduced-Scale Project (1,500-acre Solar PV Project)	Alternative C: No Action / No Project	Alternative D: Rooftop Solar (CEQA Alternative only)
<b>Transportation</b>	Construction and decommissioning: increased traffic (1,840 daily trips) with no substantial change in LOS on affected roadways. Operation and maintenance: minor traffic increase.	Construction and decommissioning: reduced duration of traffic increases. Operation and maintenance: slightly reduced traffic increase.	No impacts to existing traffic conditions on area roadways.	Reduced impact as construction installation trips would be dispersed and would not congregate in one location.
<b>Water Resources</b>	Construction and decommissioning: potential impacts to water quality through erosion and sedimentation. A maximum of approximately 200 AFY of water per year would be required during the 2-year construction period. Approximately 200 total AFY would be required during decommissioning for dust control and sanitation. During operation, the proposed project would require approximately 30 AFY.	Similar construction, impacts to hydrology and water quality. Reduced impacts related to erosion and flooding due to fewer disturbed ground acres and shorter construction period. Similar operational and decommissioning impacts, reduced amounts of pervious ground surface lost.	No impacts related to hydrology and water quality.	Reduced impacts, as there would be no increase in impervious surfaces.

1

1 **Relationship of the Project to Other Solar Projects**

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

# 1 CHAPTER 3

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## 2 Environmental Analysis

### 3 3.0 Introduction

4 This chapter of the EIS/EIR assesses the environmental consequences or impacts that would  
5 result from implementation of the Proposed Action or other alternatives described in Chapter 2,  
6 *Proposed Action, Project Description, and Alternatives*, on resources, resource uses and other  
7 important topics (including hazardous materials and safety, social and economic considerations,  
8 and environmental justice conditions). “Resources” include air, soil, water, vegetative communities,  
9 wildlife, as well as cultural, paleontological, and visual resources. “Resource uses” include land use  
10 planning, minerals, recreation, transportation and public access, and utilities and public  
11 services. For each resource area evaluated, Chapter 3 includes a description of the regional and  
12 local environmental setting; summary of the applicable laws, regulations, plans, and standards;  
13 summary of the analytical methodology used; analysis of direct, indirect, and cumulative effects;  
14 identification of mitigation measures proposed to address significant impacts; an explanation of  
15 the residual impacts that would remain after the implementation of all proposed project design  
16 features, mitigation measures; and analysis of CEQA-specific significance criteria as identified in  
17 the CEQA Guidelines (14 Cal. Code Regs. §15000 et seq.) Appendix G.

18 This chapter documents the lead agencies’ analysis of the direct, indirect, and cumulative effects  
19 that could occur under NEPA and CEQA as a result of implementing each of the alternatives. It  
20 considers the impacts of short-term uses, such as construction and decommissioning-related truck  
21 traffic, and the impacts that would occur over the longer-term operation and maintenance period  
22 or that would persist after initial occurrence, such as removal of slow-growing vegetation, or  
23 destruction of irretrievable or irreplaceable resources. It also identifies mitigation measures that  
24 could avoid or reduce adverse impacts, and summarizes the residual and unavoidable adverse  
25 impacts on an issue-by-issue basis.

#### 26 3.0.1 Baseline

27 The baseline for purposes of this EIS/EIR is on or about November 27, 2017, which is the date the  
28 Air Force published a Notice of Intent announcing the intentions of the Air Force and the County  
29 to prepare an EIS/EIR (78 Fed. Reg. 32240-32241). The County published a Notice of  
30 Preparation for the project for CEQA purposes on November 27, 2017. The baseline is the  
31 affected environment described in Sections 3.1 through 3.16 and is intended to reflect the pre-  
32 project environmental conditions to which the potential impacts of all alternatives are compared.

## 3.0.2 Analytical Assumptions

The impact analyses contained in this chapter were conducted using the following requirements:

1. The laws, regulations, and policies applicable to the Air Force when it authorizes leases for renewable energy development facilities would be applied consistently for all action alternatives.
2. The laws, regulations, plans, ordinances, and policies applicable to the County authorizing gen-tie lines would be applied consistently for all action alternatives.
3. The proposed facility would be constructed, operated, maintained, and decommissioned as described in each action alternative.
4. The Air Force holds the proposed project area on Edwards AFB as proprietary legislative jurisdiction. Private or commercial development within this project area requires application of federal laws, regulations and other orders and instructions. However, some of the project actions trigger application and/or consideration of State and local laws, regulations, ordinances and other relevant planning instruments.

## 3.0.3 Types of Effects

The potential impacts from those actions that could have direct, indirect, and cumulative effects are considered for each resource. The terms “effects” and “impacts” as used in this document are synonymous and could be beneficial or detrimental.

For NEPA purposes, Council on Environmental Quality (CEQ) regulations define direct effects as effects “...which are caused by the action and occur at the same time and place” and indirect effects as effects “...which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable” (40 CFR 1508.8(a)-(b)). This document combines the discussion of direct and indirect effects. Chapter 3 also provides descriptions of the residual effects of any adverse impacts that remain after mitigation measures have been applied.

CEQ regulations define a cumulative effect as “...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions” (40 CFR 1508.7). The scenario used for defining and analyzing cumulative impacts is discussed in Section 3.5, below.

For CEQA purposes, CEQA Guidelines §15358 defines “effects” and “impacts” synonymously to include: direct or primary effects, which are caused by the project and occur at the same time and place; and indirect or secondary effects, which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. “Cumulative effects” refer to two or more individual effects, which, when considered together, are considerable or that compound or increase other environmental impacts (CEQA Guidelines §15355). The cumulative effect 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

1 future projects. Cumulative impacts can result from individually minor but collectively significant  
2 projects taking place over a period of time.

### 3 **3.0.4 Impact Significance Criteria**

#### 4 **NEPA**

5 Under NEPA, the Environmental Consequences section of an EIS must include a discussion of  
6 environmental effects “and their significance” (40 CFR §§1502.16(a) and (b)). According to 40  
7 CFR §1508.27, the term “significantly” as used in NEPA requires considerations of both context  
8 and intensity. This means that the significance of an action must be analyzed in several contexts  
9 such as society as a whole (human, national), the affected region, the affected interests, and the  
10 locality. Significance varies with the setting of the proposed action. Intensity refers to the severity  
11 of the impact. The following should be considered in evaluating intensity:

- 12 1. Impacts that may be both beneficial and adverse. A significant effect may exist even if  
13 the federal agency believes that on balance the effect will be beneficial.
- 14 2. The degree to which the proposed action affects public health or safety.
- 15 3. Unique characteristics of the geographic area such as proximity to historic or cultural  
16 resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically  
17 critical areas.
- 18 4. The degree to which the effects on the quality of the human environment are likely to be  
19 highly controversial.
- 20 5. The degree to which the possible effects on the human environment are highly uncertain  
21 or involve unique or unknown risks.
- 22 6. The degree to which the action may establish a precedent for future actions with  
23 significant effects or represents a decision in principle about a future consideration.
- 24 7. Whether the action is related to other actions with individually insignificant but  
25 cumulatively significant impacts. Significance exists if it is reasonable to anticipate a  
26 cumulatively significant impact on the environment. Significance cannot be avoided by  
27 terming an action temporary or by breaking it down into small component parts.
- 28 8. The degree to which the action may adversely affect districts, sites, highways, structures,  
29 or objects listed in or eligible for listing in the National Register of Historic Places or  
30 may cause loss or destruction of significant scientific, cultural, or historical resources.
- 31 9. The degree to which the action may adversely affect an endangered or threatened species  
32 or its habitat that has been determined to be critical under the Federal ESA.
- 33 10. Whether the action threatens a violation of federal, state, or local law or requirements  
34 imposed for the protection of the environment.

35 In addition, 40 CFR §§1502.25, 1500.2(c), 1500.4(k), 1500.5(g), require that environmental  
36 review laws and executive orders be integrated with EISs to the fullest extent possible and 40  
37 CFR §1502.2(d) requires that an EIS state how the alternatives achieve the requirements of  
38 environmental laws and policies.

## 1 **CEQA**

2 The Kern County CEQA Implementation Document and Kern County Environmental Checklist  
3 identify criteria, as established in Appendix G of the CEQA Guidelines and the Notice of  
4 Preparation/Initial Study, to determine if a project could have a significant adverse effect on the  
5 environment. In contrast to NEPA, the *CEQA Guidelines* include unique significance thresholds  
6 for each resource topic. As a result, the significance thresholds for each resource topic are  
7 presented in each section of Chapter 3 prior to the discussion of impacts.

### 8 **3.0.5 Resources and Uses Not Affected or Present in the** 9 **Action Area**

10 Resources and resource uses that are not present in the project area or not affected by the  
11 alternatives include recreational resources and population and housing.

### 12 **3.0.6 Cumulative Projects**

## 13 **NEPA**

14 NEPA requires that a EIS evaluate a project's cumulative impacts. The CEQ regulations (40 CFR  
15 §§ 1508.7 and 1508.8) define the impacts and effects that must be addressed and considered by  
16 federal agencies in satisfying the requirements of the NEPA process, which includes direct,  
17 indirect and cumulative impacts:

18 *"Cumulative impact" is the impact on the environment which results from the*  
19 *incremental impact of the action when added to other past, present, and*  
20 *reasonably foreseeable future actions regardless of what agency (federal or non-*  
21 *federal) or person undertakes such other actions. Cumulative impacts can result*  
22 *from individually minor but collectively significant actions taking place over a*  
23 *period of time.*

## 24 **CEQA**

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

33 According to the *CEQA Guidelines*:

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

1 (a) *The individual effects may be changes resulting from a single project or a number*  
 2 *of separate projects.*

3 (b) *The cumulative impact from several projects is the change in the environment,*  
 4 *which results from the incremental impact of the project when added to other*  
 5 *closely related past, present, and reasonable foreseeable probable future projects.*  
 6 *Cumulative impacts can result from individually minor but collectively significant*  
 7 *projects taking place over a period of time” (California Code of Regulations*  
 8 *[CCR], Title 14, Division 6, Chapter 3 § 15355).*

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

10 *“The mere existence of significant cumulative impacts caused by other projects*  
 11 *alone shall not constitute substantial evidence that the proposed project’s*  
 12 *incremental effects are cumulatively considerable.” (CCR, Title 14, Division 6,*  
 13 *Chapter 3 § 15064[h][5]).*

14 Cumulative impact discussions for each environmental topic area are provided at the end of each  
 15 technical analysis contained within Chapter 3, under “Cumulative Impact Analysis” A list and  
 16 description of past, present, and reasonably foreseeable projects near the project site can be found  
 17 in **Table 3-1. Figures 3-1 and 3-2** show the approximate location of the proposed solar projects  
 18 in Kern and Los Angeles Counties considered in the cumulative analysis.

### 19 3.0.7 Approach to the Analysis of Cumulative Effects

20 This document analyzes cumulative impacts of the construction, operation and maintenance, and  
 21 closure and decommissioning of the Proposed Action and other alternatives. This EIS/EIR  
 22 considers the direct and indirect effects of each alternative together with the effects of the other  
 23 actions that could combine geographically and temporally (i.e., would be causing impacts in the  
 24 same area at the same time as the Proposed Action and alternatives) and, thereby, cause a  
 25 cumulative effect. For each resource or issue considered in this Chapter 3, the cumulative effects  
 26 analysis identifies the relevant geographic area and time period within which cumulative effects  
 27 could occur and then describes existing conditions (which are the combination of the natural  
 28 condition and the effects of past actions) and the effects of other present and reasonably  
 29 foreseeable future actions in combination with the effects of each alternative. Where relevant, the  
 30 cumulative effects analysis also describes the relationship of the cumulative effects to any  
 31 established thresholds. A quantitative analysis is provided where possible; where quantification is  
 32 infeasible, qualitative effects are described.

33

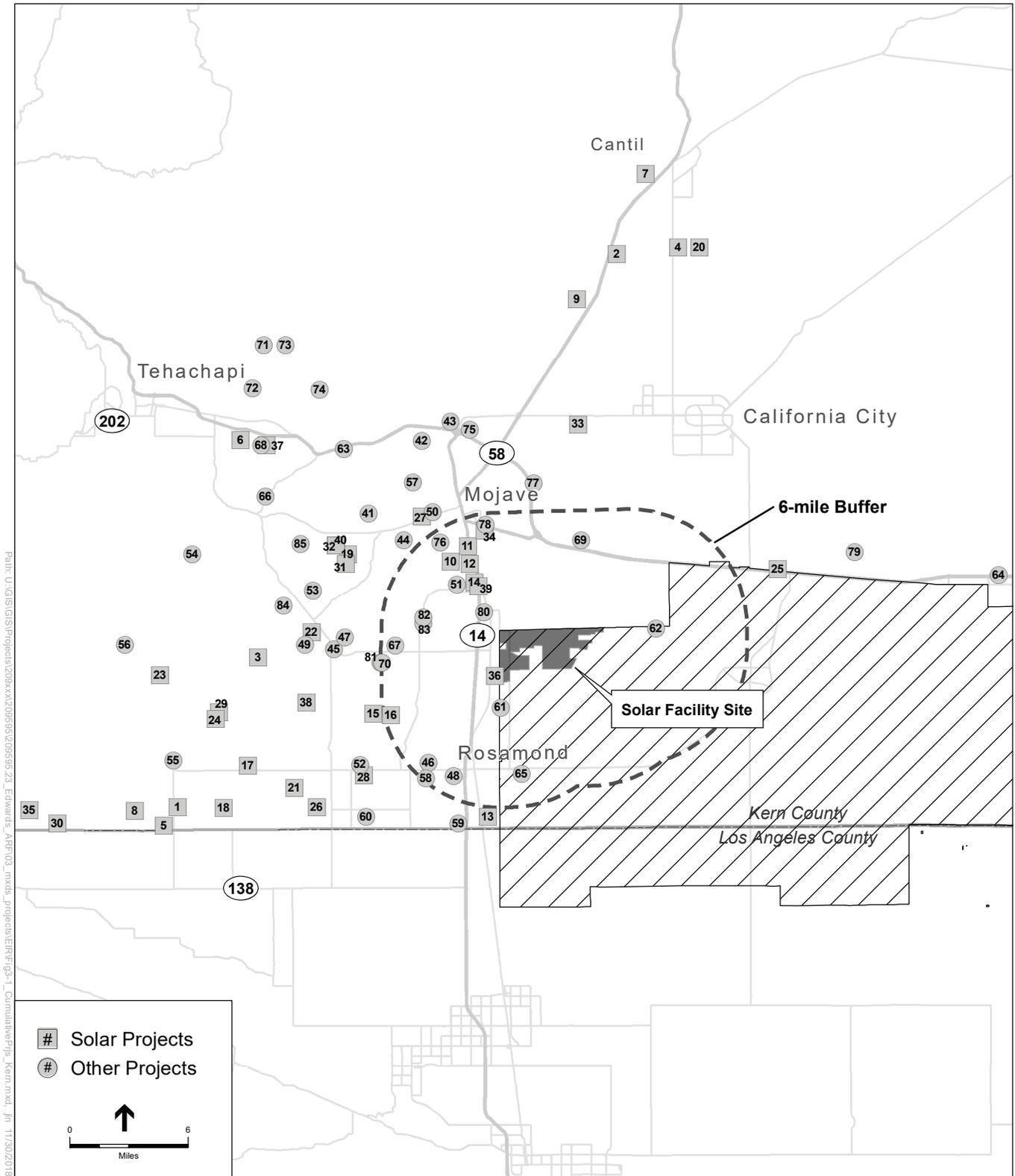


Figure 3-1: EASTERN KERN COUNTY CUMULATIVE PROJECTS MAP

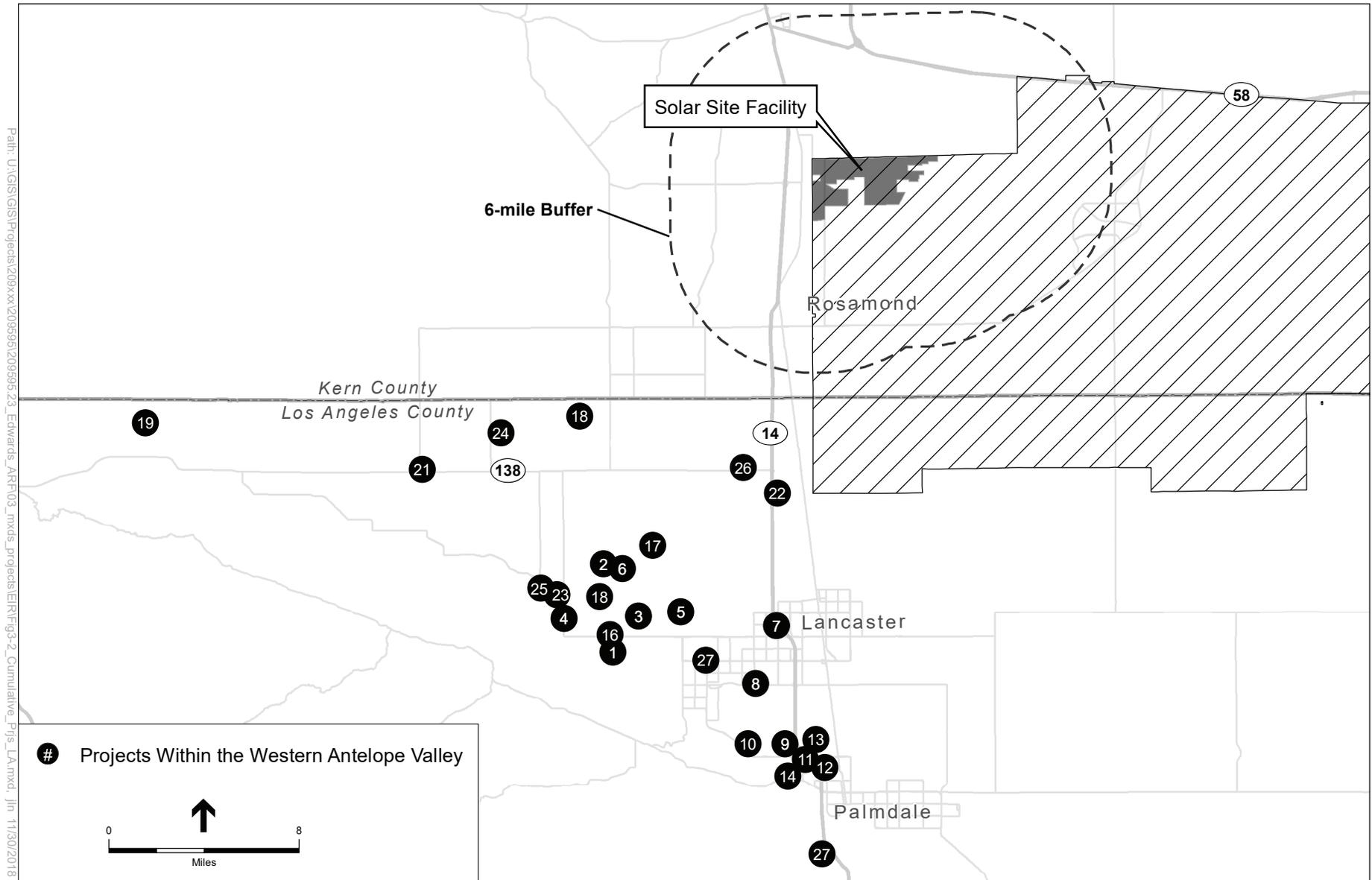


Figure 3-2: LOS ANGELES COUNTY CUMULATIVE PROJECTS MAP

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>	
<b>EASTERN KERN COUNTY PROJECTS (Figure 3-1)</b>				
<b>SOLAR PROJECTS</b>				
1.	Antelope Valley Solar Project by Renewable Resources Group	650 MW	5,698 acres	Approved 6/23/11
2.	Beacon Solar by Nextera	250 MW	2,320 acres	Approved 10/1/12
3.	Aurora Solar, LLC (Jen Bradford)	40 MW	320 acres	Construction has not commenced
4.	Fremont Valley Preservation Solar Project	1,008 MW	4,806 acres	Pending approval
5.	Kingbird Solar	40 MW solar facility	324 acres	Approved October 2014
6.	GE Energy LLC by URS Corp	40 MW	337 acres	Approved 6/19/09
7.	LADWP	10 MW	75 acres	Approved 12/16/09
8.	RE Astoria by RE Astoria LLC (Recurrent)	175 MW	2,000 acres	Approved December 2014
9.	RE Barren Ridge	74 MW	588 acres	Approved 12/6/11
10.	RE Columbia	20 MW	165 acres	Operational
11.	RE Columbia 2	20 MW	132 acres	Operational
12.	RE Columbia 3	10 MW	68 acres	Operational
13.	RE Great Lakes	5 MW	40 acres	Approved 12/6/11
14.	RE Rio Grande	47 MW	5 acres	Approved 12/6/11, Under construction
15.	RE Rosamond 1	20 MW	320 acres	Approved 12/6/11, Under construction
16.	RE Rosamond 2	20 MW	160 acres	Approved 12/6/11, Under construction
17.	Rosamond Solar Array by First Solar/Rosamond Solar, LLC	150 MW	1,177 acres	Approved October 2014
18.	Rosamond Solar by SGS Antelope Valley	120 MW	960 acres	Approved 11/9/2010
19.	SEPV Mojave West	20 MW	180 acres	Operational
20.	Fremont Solar (Springbok 2 Solar Farm) by 8 Minute Energy Renewables (3 sites)	230 MW	1,296 acres	Approved March 2014
21.	Willow Springs Solar Array by First Solar	160 MW	1,402 acres	Approved March 2016
22.	Apollo Solar	60 MW	500 acres	Active
23.	Camino Solar by Aurora Solar	44 MW	339 acres	EIR in progress
24.	EDF Renewable Energy	100 MW	2,250 acres	No activity since 8/2014, not complete
25.	North Muroc Solar by Nautilus Solar	9 MW	73 acres	Placed in suspense 7/22/2012, not complete

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>
26. Sunshine Solar	40 MW	319 acres	No activity since 5/2012, not complete
27. The Aeromen LLC	1- 100 MW, and 3- 5 MW	237 acres	Construction has not commenced
28. Gettysburg Solar	20 MW	159 acres	Construction has not commenced
29. Valentine Solar	115 MW	1,430	Approved June 2016
30. RE Garland Solar	200 MW	2,116 acres	Approved
31. Windhub Solar	40 MW	147.5 acres	EIR in progress
32. Sunlight Partners	Info unavailable	29 acres	Kill letter sent 2/2/2012, not complete
33. Sunlight Partners 2	Info unavailable	19 acres	Kill letter sent 3/3/2014, not complete
34. Mojave Solar Park by Cal West Energy (Jonathan Bender)	Info unavailable	29 acres	Construction has not commenced
35. RE Gaskell West Solar Project	125 MW	1,463 acres	Approved April 2017
36. FRV Mojave Solar, LP	20 MW	174 acres	Operational
37. GE Energy by Ty Remington	20 MW	820 acres	Construction has not commenced
38. IP Solar Company	Info unavailable	40 acres	Construction has not commenced
39. Rio Grande Solar by Recurrent Energy	5 MW	46 acres	Operational
40. Sinarpower Inc.	20 MW	17.5 acres	Construction has not commenced
<b>NON-SOLAR PROJECTS</b>			
41. Addison Energy Wind Project	Proposed wind facility	1,325 acres	Operational
42. Alta East by Alta	318 MW wind facility with up to 106 wind turbines	2,592 acres	Operational
43. Alta Infill II Wind Energy Project EIR	530 MW wind facility	5,185 acres	Operational
44. Alta-Oak Creek Mojave Project EIR	220 kV wind energy generation facility	9,120 acres	Operational
45. Avalon Wind Energy Project	300 MW wind energy generation facility	7,369 acres	Approved; Construction has not commenced.
46. Barton, Larry by Pinnacle Civil Engineering	Info unavailable	Info unavailable	Info unavailable
47. Blue Eagle Lode Mining Company	Info unavailable	1.75 acres	Info unavailable
48. California Builders	Info unavailable	Info unavailable	Info unavailable
49. Catalina Renewable Energy Project	200 MW wind from 134 wind turbines and 150 MW solar from 2,241,000 panels	6,739 acres	Approved December 2011; 128 MW solar facility operational

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>
50. Catalina Solar 2 LLC (Enxco/EDF)	Catalina 350 MW Wind & Solar Project. This CUP is for the solar facility.	Info unavailable	Operational
51. Golden Queen Mining Company	Open pit mining with cyanide heap leach processing	2,500 acres (905 acre mine site)	Mine and processing facilities are operational.
52. Largent Group, LLC/Cornerstone (10381)	Info unavailable	Info unavailable	Info unavailable
53. Lower West Wind Energy Project	14 MW from seven wind turbines	185 acres	Operational
54. Morgan Hills Wind Energy Project	230 MW from 76 wind turbines	3,808 acres	Approved October 2011; Construction has not commenced.
55. Pacific Wind Energy	140 MW from wind turbine generators	8,500 acres	Operational
56. 2PdV Wind Energy Project	300 MW of electricity from wind turbines	3,373 acres	Approved August 2008
57. Rising Tree Wind Energy Project	Up to 41 wind turbines producing up to 135 MW	1,535 acres	Approved May 2014; Approximately 30 turbines constructed to date.
58. Royal Investor's Group, LLC by Cornerstone Engineering	Info unavailable	Info unavailable	Info unavailable
59. Superior Real Estate, Inc.	Info unavailable	Info unavailable	Info unavailable
60. Terra Five, LLC by Hall & Foreman, Inc.	Info unavailable	Info unavailable	Info unavailable
61. Utility Corridor 3 on Edwards AFB	Utility corridor	Info unavailable	May be developed as a utility corridor in the future
62. Utility Corridor 9 on Edwards AFB	Utility corridor	Info unavailable	May be developed as a utility corridor in the future
63. California High Speed Rail	Rail corridor	Info unavailable	Info unavailable
64. Caltrans Kramer Junction Project-Realignment and Widening	Highway realignment and widening of a 13-mile section of SR 58	Info unavailable	Under construction
65. Amendment to Edwards AFB R-2515 Airspace	Airspace amendment for consolidation of multiple flight training routes, the addition of a new route, and the introduction of new weapons systems	1,575 square miles	Complete
66. Cameron Canyon Ridgeline Wind Project	Wind energy project	20.53	Active
67. Renhong QU	Dog breeding and dog kennels	4.7 acres	Active
68. Ares, LLC-Francesca Cava	Test track for and energy storing rail system	200 acres	Approved September 2016

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>
69. AT&T – Vance Pomeroy	80 foot tall ball field light standard for wireless communication facility	8.92 acres	Approved March 2017
70. AT&T – Vance Pomeroy	68'-6" tall monopine wireless communication facility with associated equipment shelter	1.25 acres	Active
71. Randy Hardenbrook	2nd MH to exceed size, might be changed to additional dwelling unit	19.85 acres	Info unavailable
72. Jeff Quinn	A CUP for a private airport for recreational use	20 acres	Info unavailable
73. Jennifer Arn	Kennel - dog breeder for Golden Retrievers	5 acres	Info unavailable
74. Christopher Snow	4 RV Pedestals, 19.16.030 C for recreation	2.5 acres	Info unavailable
75. Dona Recchia	8.5/2.5, 8.3, & 4.1 to 6.3	233.06 acres	Info unavailable
76. Grigor Termendjian	LNG Plant	9.76 acres	Info unavailable
77. De Monte Family Trust -Ralph De Monte	Request is undefined	20.52 acres	Info unavailable
78. Water Resorts Inc by Nelms Surveying	Zone change to M-1	20.04 acres	Info unavailable
79. Kilby, Bob/John Bell	M-1 PD FPS H	2.5 acres	Info unavailable
80. Nazaryan, Tigran	RV Park	1 acre	Info unavailable
81. Daunert, Diana/D Dmohowski	Animal shelter & additional dwelling	10 acres	Info unavailable
82. Maloney, Jay	Movie site	2.28 acres	Info unavailable
83. Rosa Garcia	Mobile home not meeting age/arch	2.44 acres	Info unavailable
84. Frieling, Diana	Wild Animal Keeping	40 acres	Info unavailable
85. Romanowitz, Harold/J E Duggan	Wind-driven electrical generators	n/a	Operational
<b>LOS ANGELES COUNTY PROJECTS (Figure 3-2)</b>			
<b>City of Lancaster</b>			
1. CUP 11-02	3 MW solar facility, RR - 2.5	Info unavailable	Approved 9/19/11
2. CUP 11-03	10 MW solar facility, RR - 2.5	Info unavailable	Approved 9/19/11
3. CUP 11-05	20 MW solar facility	Info unavailable	Approved 9/19/11
4. CUP 11-07	30 MW solar facility, RR - 2.5, UR, SP	Info unavailable	On hold
5. CUP 11-09	68 single family dwellings, drainage channel and park	Info unavailable	In review

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>
6. CUP 10-22	PV solar facility comprised of two 19 MW solar fields	Info unavailable	Info unavailable
7. CUP 04-10	Marriott Towne Place Suites	52,594± SF	Info unavailable
8. CUP 10-20	Hindu temple, hall and other structures	2.48± acres; 2,169± SF Hindu temple, 2,017± SF hall	Info unavailable
<b>City of Palmdale</b>			
9. CUP 12-008	Proposed bonafide restaurant/cocktail lounge/nightclub	6,000 SF	Approved 6/18/13
10. SPR6-10-1T	2 year TE to previously approved project for 80 detached condos	12.3 acres	Approved 9/5/13
11. PA11-019	5 commercial retail buildings and carwash	4.9 acres	Completed 6/18/13
12. PA11-021	Industrial use consisting of one building totaling approximately 350,640 SF	350,640 SF on a 18.99 acre parcel	Completed 6/18/13
13. PA13-001	4.91 acres into retail/commercial in 5 buildings	44,400 SF	Completed 6/18/13
14. PA13-005	167 condo lots and a recreation lot	34.8 acres	Completed 6/18/13
<b>Unincorporated Los Angeles County</b>			
15. R2009-02089 Alpine Solar	92 MW photovoltaic solar electricity generation facility	835 acres	Approved; final letter distributed 12/4/13
16. R2011-00798 Western Antelope Blue Sky	40 MW photovoltaic solar electricity generation facility and a 10,000 gallon water tank located in the A-2-5 zone	157 acres	Approved 6/11/14
17. R2011-00799 American Solar Greenworks	35 MW photovoltaic solar electricity generation facility and a 10,000 gallon water tank located in the A-2-2 zone	135.6 acres	Approved 6/11/14
18. R2011-00807 Antelope Solar Greenworks	52 MW photovoltaic solar electricity generation facility and a 10,000 gallon water tank located in the A-2-2 zone	256 acres	Approved 6/11/14
19. R2012-00024 Quail Lake	100 MW photovoltaic solar electricity generation facility	692 acres	Comments received 3/22/12

**TABLE 3-1  
CUMULATIVE PROJECTS LIST**

<b>Project Name/ CASE ID</b>	<b>Project Description</b>	<b>Area</b>	<b>Project Status</b>
20. R2013-03397 Antelope Valley Solar	The project is a solar photovoltaic generating facility up to 7.45 MW in size	80 acres	Approved 1/5/2015
21. R2009-02239 AV Solar Ranch One	240 MW PV Project	2100 acres	Approved 12/7/10
22. R2012-00849 Rutan	4 MW PV Project	45.3 acres	Approved 2/19/13
23. R2012-01589 West Antelope Solar Project	20 MW PV Project	263 acres	Approved 5/6/14
24. R2010-00808 Antelope Valley Solar	156 MW PV Project	1238 acres	Approved 1/3/13
25. R2011-00801 Silver Sun Greenworks	20 MW PV Project	80 acres	Approved 6/11/14
26. R2011-00805 Lancaster WAD	5 MW PV Project	39 acres	Approved 6/11/14
27. R2011-01290	Construction, operation, and maintenance of an operations and maintenance facility for the Quartz Hill Water District		Approved 2/5/14
28. R2015-00800 Neenach Solar	2 MW PV Project	40 acres	MND pending approval
29. RPPL2016-001556 Lancaster Energy Project	42 MW PV Project	107 acres	Approved 5/2/18
30. Project 91055	43 single-family residences on one acre minimum lots		Application received

1 If the Proposed Action or an alternative would have no direct or indirect effects on a resource,  
 2 then it could not cause or contribute to potential cumulative effects on that resource. In these  
 3 instances, no cumulative effects analysis has been completed. See, for example, Section 3.0.5,  
 4 Resources and Uses Not Affected or Present in the Action Area, above.

### 5 3.0.8 Mitigation Measures Identified in the Analysis

6 For impacts identified in the following resource sections, mitigation measures have been  
 7 developed to avoid or reduce potential adverse environmental effects; these measures would be  
 8 implemented during all appropriate phases of the project, from initial ground breaking and  
 9 construction, to operation and maintenance, and through closure and decommissioning. The  
 10 analysis considers the project's potential environmental impacts after the implementation of all  
 11 project design features, other measures to reduce potential impacts, and regulatory requirements  
 12 of federal, state, and local agencies.

1 An Environmental and Construction Compliance Monitoring Plan (ECCMP)/Mitigation  
2 Monitoring, Reporting, and Compliance Program (MMRCP) would be prepared if the Proposed  
3 Action or another action alternative is approved to ensure the effective implementation of the  
4 mitigation measures identified to address adverse impacts.

5 Because these mitigation measures are developed from a variety of sources, they also may be  
6 required by agencies other than the Air Force or the County and their implementation would be  
7 enforced by those other agencies. For instance, any Reasonable and Prudent Measures identified  
8 by the USFWS as part of the Federal ESA Section 7 process would be included in the ROD. If the  
9 Proposed Action or another action alternative is approved, the developer would be required by the  
10 lease to comply with the requirements of those other agencies (see, e.g., 43 CFR 2805.12(a)  
11 [federal and state laws and regulations], and (i)(6) [more stringent state standards for public  
12 health and safety, environmental protection and siting, constructing, operating, and maintaining  
13 any facilities and improvements on the site]). Any non-compliance with implementation of these  
14 other requirements may affect the status of the lease.

## 3.1 Aesthetics

### 3.1.1 Affected Environment

This EIS/EIR section describes the affected environment for aesthetic resources in the area of the Proposed Action, including the regulatory and environmental settings.

#### 3.1.1.1 Scoping Issues Addressed

No comments related to aesthetic resources were received.

#### 3.1.1.2 Visual Concepts and Terminology

When viewing a landscape, people may have different responses to that landscape and any proposed visual changes, based upon their values, familiarity, concern, or expectations for that landscape and its scenic quality. The visual sensitivity of a landscape is also affected by the travel speed at which a person is viewing the landscape (e.g., high speeds on a highway, low speeds on a hiking trail, or stationary at a residence). Because each person's attachment to and value for a particular landscape is unique, visual changes to that landscape inherently affect viewers differently. However, generalizations can be made about viewer sensitivity to scenic quality and visual changes. For example, recreational users (e.g., hikers, equestrians, tourists, and people driving for pleasure) typically have the highest concern for scenery and landscape character since the activities they are partaking in focus on visual character with prolonged viewing times.

The same feature of a project can also be perceived differently by people depending on the distance between the observer and the viewed object. This distance is defined as "viewing distance" or "distance zones." For the purpose of this analysis, distance zones are delineated as foreground-middleground, background, and seldom-seen. When a viewer is closer in proximity to a viewed object in the landscape, more detail can be seen and there is greater potential influence of the object on visual quality because of its form or scale (relative size of the object in relation to the viewer). When the same 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 (like the foreground) and landscape elements are seen in context with landforms and vegetation patterns (like the background). For this analysis, the following three viewing distances were used, as described and defined by the Bureau of Land Management (BLM) (1984):

- **Foreground-Middleground** – Areas visible from a travel route, use area, or other observation point to a distance from 3 to 5 miles away. The outer boundary of this zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. Vegetation is apparent only in patterns or outline.
- **Background** – The visible area of a landscape that lies beyond the foreground-middleground. Usually from a minimum of 3 to 5 miles to a maximum of about 15 miles from a travel route, use area, or other observer point. Atmospheric conditions in some areas may limit the maximum to about 8 miles or less.

- 1 • Seldom-Seen – Areas that are not visible within the foreground-middleground and  
2 background zones and areas beyond the background zones.

3 The following terms are used in the subsequent discussion to describe and assess the aesthetic  
4 setting and potential impacts resulting from implementation of the Proposed Action.

5 **Key Observation Point (KOP).** One point or a series of points within a project viewshed from  
6 which views of the project would be most revealing or most representative of views from sensitive  
7 receptors.

8 **Scenic vista.** A distant public view along or through an opening or corridor that is recognized and  
9 valued for its scenic quality. It is an area that is designated, signed, and accessible to the public for  
10 the express purposes of viewing and sightseeing. A scenic vista may be officially recognized or  
11 designated (e.g., within local planning documents or the California Department of Transportation  
12 (Caltrans) Scenic Highway Program, or informally recognized as scenic in nature (e.g., mountain  
13 peaks or coastal bluffs).

14 **Scenic highway.** Any stretch of public roadway that is designated as a scenic corridor by a federal,  
15 state, or local agency.

16 **Sensitive receptors or sensitive viewpoints.** Viewer responses to visual settings are inferred from  
17 a variety of factors, including distance and viewing angle, type of viewers, number of viewers,  
18 duration of view, and viewer activities. Sensitive viewpoints (those viewpoints from which project  
19 impacts are assessed) typically include any scenic vistas, scenic highways, residences, public parks,  
20 recreational areas, and/or culturally important locations from which the project sites could be  
21 visible.

22 **Viewshed.** The viewshed for a project is defined as the surrounding geographic area from which  
23 the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and  
24 roadway orientations. “Project viewshed” is used to describe the area surrounding a project site  
25 where a person standing on the ground or driving a vehicle can view the project site.

### 26 **3.1.1.3 Regulatory Framework**

27 There are no federal or state regulations that apply to implementation of the Proposed Action.

#### 28 **Local**

##### 29 **Kern County General Plan**

30 The gen-tie route options would be located within the jurisdiction of the Kern County General Plan.  
31 In addition, construction of the generation tie lines would require Kern County approvals and is  
32 subject to the General Plan’s visual-related policies (see Section 3.11, Land Use).

33 The Land Use, Open Space, and Conservation Element of the Kern County General Plan evaluates  
34 the visual and aesthetic setting of Kern County and assesses the potential for visual impacts.

1 The Kern County General Plan Circulation Element provides guidelines for development near  
2 Scenic Routes. A Scenic Route is defined in the Kern County General Plan as any freeway,  
3 highway, road, or other public right-of-way which traverses an area of exceptional scenic quality.  
4 A roadway can only be designated as a scenic route by direct action of the Kern County Board of  
5 Supervisors or the State of California. A route may not be selected as scenic until a visual  
6 assessment of the route has been conducted to determine if the route meets the current scenic  
7 highway criteria and to what extent development has encroached on the scenic views. The County  
8 also has to prepare and adopt a plan and program for the protection and enhancement of adjacent  
9 roadside viewshed land. The Kern County Board of Supervisors has not designated any roads as  
10 “scenic” within the county.

11 The Kern County General Plan provides goals and policies for the design features of development  
12 projects in order to reduce impacts of such projects. The policies and implementation measures in  
13 the Kern County General Plan for aesthetic resources that are applicable to the project are provided  
14 below. The Kern County General Plan contains additional policies, goals, and implementation  
15 measures that are more general in nature and are not specific to development such as the proposed  
16 project. Therefore, they are not listed below, but all policies, goals, and implementation measures  
17 in the Kern County General Plan are incorporated by reference.

18 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation**  
19 **Element**

20 1.10.7 Light and Glare

21 Policies

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

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

26 Implementation Measure

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

30 In addition to the Kern County General Plan, the Proposed Action’s gen-tie route options would  
31 also be located within the following Kern County Specific Plans:

32 The Mojave Specific Plan establishes goals, policies, and implementation measures intended to  
33 protect visual resources that are general in nature and are not specific to development such as the  
34 Proposed Action, including open space and scenic land recommendations to protect all designated  
35 or proposed Scenic and County Highways.

1 The West Edwards Road Settlement Specific Plan states the preservation of Lookout Hill from any  
2 development would be encouraged, and all grading of land should be accomplished under permit  
3 in such a manner as to preserve the scenic values as feasible.

4 The South of Mojave Elephant Butte Specific Plan establishes recommendations and  
5 implementation measures addressing open space, recreation, and circulation within the plan area.  
6 These recommendations and implementation measures include natural resource and scenic land use  
7 policies.

8 The West Edwards Road Settlement Specific Plan contains recommendations and implementation  
9 measures addressing land use, open space, and conservation, including scenic resources.

10 The Willow Springs Specific Plan contains goals, policies, and implementation measures intended  
11 to protect visual resources that are general in nature and are not specific to development such as  
12 the Proposed Action, including the open space and conservation recommendations to maintain  
13 larger areas of open space and preserve the natural appearance and terrain as much as possible.

#### 14 **Kern County Zoning Ordinance**

15 Chapter 19.81 Dark Skies Ordinance establishes measures to preserve Kern County dark skies, and  
16 thus a minimal approach is taken to outdoor lighting, as excessive illumination can create a glow  
17 that may obscure the night sky and may constitute a nuisance. The purpose of this ordinance is to  
18 provide requirements for outdoor lighting within specified unincorporated areas of Kern County to  
19 encourage a safe, secure, and less light-oriented nighttime environment for residents, businesses,  
20 and visitors.

#### 21 **Objectives**

22 Objective 1: Encourage a safe, secure, and less light-oriented night-time environment for  
23 residents, businesses and visitors.

24 Objective 2: Promote a reduction in unnecessary light intensity and glare, and to reduce light  
25 spillover onto adjacent properties.

26 Objective 3: Protect the ability to view the night sky by restricting unnecessary upward  
27 projections of light.

28 Objective 4: Promote a reduction in the generation of greenhouse gases by reducing wasted  
29 electricity that can result from excessive or unwanted outdoor lighting.

#### 30 **Kern County Development Standards**

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

### 3.1.1.4 Environmental Setting

#### *Regional Setting*

The proposed solar facility would be located on the northwest corner of Edwards AFB, approximately 6 miles northeast of the community of Rosamond and 6 miles south of Mojave, in southeastern Kern County, California. The major north-south route in the region is State Route (SR) 14, and the major east-west route is SR 58. Both are four-lane highways that carry significant amounts of local and regional through traffic. Paved and unpaved roadways, generally following section lines, are found throughout the Antelope Valley.

The proposed solar facility is located in the western portion of the Mojave Desert. The Kern County portion of the Mojave Desert is to the south and east of the Tehachapi Mountains and north of the San Gabriel Mountains and is dominated by desert vegetation. The topography is mostly flat, but elevations gradually rise toward the west and northwest. The unincorporated community of Rosamond is located to the west of the proposed solar facility along SR 14 in the southern end of the Antelope Valley, near the border with Los Angeles County. The unincorporated community of Mojave is located along SR 14, northwest of the Proposed Action.

Land uses in the region include a mix of vacant land, agriculture, low-density, single-family residential uses, recreational and public facilities, and nature preserves. Urban development is concentrated in Rosamond and Mojave. Renewable energy generation is a significant and growing land use in the desert region, with tens of thousands of acres of wind and solar power plants currently operating, under construction, or planned in the vicinity of the Proposed Action.

The region has experienced significant growth of man-made features, particularly power lines and wind turbines. High-tension transmission corridors, smaller-scale power distribution lines, and wind turbines are found throughout the region. These structures, which can exceed 100 feet in height, dominate views from some viewpoints in the area and limit or interrupt the visibility of hills located in the distance. Other man-made features impacting views in the area include roads and highways, homes, large-scale agricultural development, railroads, airports and related services, and limited industrial development. The area's primary visual character comprises low-lying desert vegetation and scattered farm areas on flat topography. There are few unique features which attract the attention of viewers. However, background views of hills and mountains offer topographic relief from the flat nature of the area.

There are very few light sources in the region because there is a lack of development in the region. Lighting is generally limited to passing vehicular traffic on area roadways and fixtures at the scattered residences in the area. Some street and residential lighting exists along Trotter Avenue. Due to limited development in the region, most roadways in the vicinity of the proposed solar facility are unpaved and few have improvements such as street lights or sidewalks.

#### **Scenic Vistas**

For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. According to the Caltrans California Scenic Highway Mapping System, there are no designated scenic highways within Kern

1 County; however, it contains the following eligible scenic highways within the vicinity of the  
2 Proposed Action:

- 3 • SR 14: The portion of SR 14 eligible for scenic highway designation is between Mojave  
4 and the intersection of U.S. Highway (US) 395 and located approximately 4 miles north of  
5 the solar facility site and 2.8 miles east of the gen-tie route options.
- 6 • SR 58: The portion of SR 58 eligible for scenic highway status is between the intersection  
7 of SR 14 and Interstate 15 near Barstow and approximately 3.2 miles north of the gen-tie  
8 route options.

9 However, since SR 14 and SR 58 are not officially designated, they are not considered scenic  
10 highways for this analysis. There are no other identified scenic highways within the vicinity of the  
11 project, as identified by the Kern County General Plan.

## 12 ***Local Setting***

### 13 **Proposed Solar Facility Site**

14 The site is covered with low-lying desert vegetation and is generally flat (elevations ranging from  
15 approximately 2,545 feet above mean sea level (amsl) to approximately 2,480 feet amsl, with a few  
16 dirt roads traversing the site. The perimeter of the project site is partially surrounded by a chain-  
17 link barbed-wire fence along Lone Butte Road and Trotter Avenue. There are existing north-south  
18 oriented transmission lines along Division Street, through the western portion of the project site. In  
19 addition, there are transmission lines located along Trotter Avenue, which turns at a slight diagonal  
20 to the southeast and through the eastern portion of the project site. Otherwise, there are no existing  
21 structures, paved drives, lighting, or other improvements on the site. There are no natural or man-  
22 made water features on the project site; there are ephemeral playas on the project site that are  
23 temporarily inundated with water, but these are not considered water features.

24 The project site is bound by Trotter Avenue to the north and Lone Butte Road to the west. The area  
25 directly north and east of the project site includes scattered residential uses, with structures  
26 averaging one story in height. Vacant land covered with sparse, low-lying desert vegetation is the  
27 predominant land use surrounding the rest of the proposed solar facility site.

28 The proposed solar facility site has no onsite lighting and none of the streets bordering the site have  
29 lighting. There is minimal offsite lighting beyond small fixtures for individual structures. These  
30 fixtures are primarily located in the rural residential areas to the north and west of the site. Because  
31 of the rural environment in which the site is located, street lighting is rare. Increased amounts of  
32 lighting are found closer to larger urbanized communities, such as Mojave.

### 33 **Proposed Gen-Tie Line Corridor**

34 The alignment options being considered for the gen-tie line would run approximately 13.5 miles  
35 northwest from the solar facility and would connect to the Southern California Edison (SCE)  
36 Windhub Substation located northwest of the solar facility, or to the Westwind Substation,  
37 approximately 0.5 miles north of the SCE Windhub Station. While the individual gen-tie route  
38 options are distinct and separate, the project is proposed so that the gen-tie line options would

1 generally follow existing county roads between the proposed solar facility and the substation.  
2 Vegetation is absent where the route options traverse graded road shoulders or man-made surfaces  
3 or consists of weedy species. The route options traverse largely undeveloped lands with scattered  
4 residential uses. However, existing wind turbines, averaging approximately 300 feet in height, are  
5 located to the east of the route options and are a dominant feature in the landscape.

## 6 **Potentially Affected Viewers**

7 Potentially affected viewers in the project viewshed include motorists on SR 14, SR 58, and  
8 adjacent roadways as well as local residents.

### 9 *Motorists*

10 Motorists are the first viewer group identified. Motorists include both local and regional travelers  
11 who are familiar with the visual setting and travelers using the roadway on a less regular basis.  
12 Most numerous are those traveling on SR14 and SR 58 (both include portions of eligible scenic  
13 highways to the north and east of the site), which constitute the primary north-south and east-west  
14 transportation corridors within the region and are conduits for a large volume of traffic. However,  
15 SR 14 and SR 58 have not been officially designated as state scenic highways; therefore, the  
16 proposed gen-tie line and study area would not be visible from an official scenic highway. There  
17 are no locally designated scenic corridors identified in the Kern County General Plan within the  
18 vicinity of the project.

19 Views of the solar facility site would include foreground-middleground views from Sierra  
20 Highway, Trotter Avenue, Lone Butte Road, Backus Road, and other surrounding local roadways,  
21 while middleground to background views would include those from SR 14 and SR 58.

22 Although some motorists would experience foreground-middleground views of the project site,  
23 motorist views are typically brief in duration, since motorists are traveling through the landscape  
24 at a higher rate of speed and are focused on the road. For this reason, overall visual sensitivity for  
25 motorists ranges from low to moderate.

### 26 *Residents*

27 The second viewer group consists of residents. Residential views are typically longer in duration  
28 and views are one of many factors that influence residential location choice. Residents living in  
29 and around adjacent communities, including Mojave, may be exposed to views of the project.  
30 Residents (within the foreground-middleground viewing distance) to the project site include those  
31 immediately west along Lone Butte Road and those immediately north along Trotter Avenue.  
32 Approximately 30 residences border the north side of the site boundary along Trotter Avenue.  
33 Overall viewer sensitivity for residents is considered high.

## 3.1.2 Environmental Consequences

This section describes the environmental consequences relating to aesthetics, light, and glare for the Proposed Action. It describes the methods used to determine the effects of the Proposed Action and lists the thresholds used to conclude whether an effect would be significant.

### 3.1.2.1 Assessment Methods/Methodology

In general, the potential aesthetic, light, and glare impacts associated with projects are evaluated on a qualitative basis. This visual impact assessment is being used to identify and assess any potential long-term adverse visual impacts on aesthetics and visual resources that might result from implementation of the Proposed Action. This assessment is based on the approved visual assessment practices developed by the BLM (BLM, 1984; 1986). The BLM manages scenic values through its Visual Resource Management (VRM) system, a system that involves inventorying scenic values and establishing management objectives for those values through the resource management planning process, and then evaluating proposed activities to determine whether they conform to the management objectives. These methods are broadly consistent with the requirements of both CEQA and BLM NEPA for purposes of environmental review. The method that is being applied to the Proposed Action includes:

- Defining the project and its visual setting by assessing the construction and operation of a typical utility-scale solar facility and associated gen-tie route options, reviewing Google Earth Pro aerial photographs and street-level photography, Kern County geographic information system (GIS) topographic and land use data, and U.S. Geological Survey (USGS) topographic data.
- Conducting a site visit (in October 2014) for the purposes of:
  - Surveying the onsite and surrounding uses to identify sensitive viewers and viewpoints for assessment of potential aesthetic impacts
  - Analyzing the baseline visual quality and character of the identified views
  - Taking photographs from the identified potential KOPs
- Depicting the visual appearance of the project once developed on the site from identified views (described in greater detail under the *Simulation Preparation* section).
- Assessing the project's impacts to KOPs in comparison to their baseline visual quality and character.
- Proposing methods to mitigate any potentially significant visual impacts identified.

The evaluation of the Proposed Action's impacts is based on professional judgment, analysis of the goals and policies in the local land use plans related to visual resources, NEPA regulations, and the significance criteria established by CEQA.

1     **Selection of Key Observation Points**

2     The intent of establishing KOPs is to visualize the physical changes created by the Proposed Action  
3     from locations most representative of how the public, particularly sensitive receptors, perceives the  
4     affected landscape. The “public” may include highway travelers, travelers on local roads, residents  
5     in surrounding private lands, etc. The sensitivity of these diverse user groups to changes in the  
6     landscape are influenced by a number of factors, including how prominent the view of the proposed  
7     project is (in terms of scale, distance, and angle of observation), the frequency and duration that  
8     viewers are exposed to the view, and whether the viewer groups are actively aware of their  
9     surroundings or expectant of high-quality views as described in “Potentially Affected Viewers”  
10    above.

11    To represent views that would be experienced from sensitive viewpoints, KOPs were selected.  
12    KOPs are single viewpoints that appropriately reflect the impact that implementation of the  
13    Proposed Action would have on one or more sensitive receptors. Sensitive receptors near the site  
14    fall into two categories: motorists and residents. The inventory of KOPs included three  
15    components: (1) identification and photo-documentation of viewing areas and potential KOPs;  
16    (2) classification of the visual sensitivity of the KOPs; and (3) an evaluation of project visibility  
17    from the KOPs. KOPs were identified based on review of available land use data, a review of aerial  
18    maps, and field inspection for the evaluation of visual resources. The process of identifying KOPs  
19    focused on selecting viewpoints that could be used to accurately represent views from a broader  
20    range of viewpoints, particularly viewpoints from nearby sensitive receptors.

21    Three KOPs were selected for visual simulation to create post-development views. The evaluated  
22    KOPs are mapped in **Figure 3.1-1**. The KOPs selected for simulation were chosen because they  
23    represent views of the Proposed Action that nearby residents and motorists along local roadways  
24    would experience. These KOPs are intended to provide a general sense of existing views toward  
25    the project site from the nearest sensitive receptors. Views of the site generally decrease when the  
26    viewing distance is increased, but the KOPs are considered representative of views from other  
27    potential sensitive receptors in the viewshed.

28    **Simulation Preparation**

29    Visual simulations of the Proposed Action from the identified KOPs were prepared to provide a  
30    comparison of pre- and post-development conditions. In addition, the simulations provide a context  
31    for the qualitative description of the visual changes that would result from the Proposed Action.

32    Key assumptions in this evaluation are summarized in **Table 3.1-1**.

1  
 2

**TABLE 3.1-1  
 VISUAL QUALITY RATING SYSTEM**

<b>Method/Assumptions</b>	
Photography from Key Observation Points	<ul style="list-style-type: none"> <li>• Photos were taken on a clear day in October 2014.</li> <li>• Visibility: 6+ miles.</li> <li>• Camera: Canon 5D digital camera with a 24 to 35 mm zoom.</li> </ul>
Visual Simulation Assumptions	<ul style="list-style-type: none"> <li>• Solar panels would be up to 12 feet in height and separated by approximately 12 feet. Center posts are placed approximately 19 feet apart.</li> <li>• Panels on a single-axis tracking system were used to show the visual impact.</li> </ul>
Methods	<p>Following data gathering phase, the process begins with a determination of proposed camera locations and/or station points. Upon review and approval of camera locations, VisionScape coordinates the engineered site photography and schedules the initial site visit with County staff and/or Planner. This includes identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team develops an exact computer model of the proposed solar panels that illustrates elevations and natural and finished pads, including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable) used as reference. Upon completion of the 3D modeling phase, realistic materials, maps, and textures are then applied. The next phase is assembly, during which the modeling is inserted into photographs taken during the field study using a full-frame camera and camera match technology. 3D pads and boundary outlines are used to situate the panels to the proposed positions as shown in the developer's design. During this process, a computer model camera is aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept is applied (where applicable) and final artistic touches are made to ensure accuracy, as well as the look and feel, is consistent with the vision of the project. GPS and camera match technology includes the use of a Trimble GeoXT (Sub-Meter) GPS device and a full-frame digital camera for documenting coordinates at requested station points.</p>
Additional Assumptions	<p>Solar arrays and substations are visually similar regardless of manufacturer or operators.</p>

3



## 1 **Rating Visual Quality**

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

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

- 9 1. The **landform** component of the visual quality rating criteria takes into account the fact  
10 that topography becomes more interesting visually as it gets steeper or more massive, or  
11 more severely or universally sculptured. Outstanding landforms may be monumental (as  
12 found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain  
13 badlands, pinnacles, arches, and other extraordinary formations).
- 14 2. The **vegetation** component of the rating criteria gives primary consideration to the variety  
15 of patterns, forms, and textures created by plant life. Short-lived displays are given  
16 consideration when they are known to be recurring or spectacular. Consideration is also  
17 given to smaller-scale vegetation features that add striking and intriguing detail elements  
18 to the landscape (e.g., gnarled or wind-beaten trees, Joshua trees).
- 19 3. The **water** component of the rating criteria recognizes that visual quality is largely  
20 enhanced by the presence of water in scenery, as it is that ingredient which adds movement  
21 or serenity to a scene. The degree to which water dominates the scene is the primary  
22 consideration in selecting the rating score for the water component.
- 23 4. The **color** component of the visual quality rating criteria considers the overall color(s) of  
24 the basic components of the landscape (soil, rock, vegetation, etc.). Key factors that are  
25 used when rating the color of scenery are variety, contrast, and harmony.
- 26 5. The **adjacent scenery** component of the rating criteria takes into account the degree to  
27 which scenery outside the view being rated enhances the overall impression of the scenery  
28 under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to  
29 5 miles, depending on the characteristics of the topography, the vegetation cover, and other  
30 such factors. This factor is generally applied to views that would normally rate very low in  
31 score, but the influence of the adjacent high visual quality would enhance the visual quality  
32 and raise the score.
- 33 6. The **scarcity** component of the visual quality rating criteria provides an opportunity to give  
34 added importance to one or all of the scenic features that appear to be relatively unique or  
35 rare within a region. There may also be cases where a separate evaluation of each of the  
36 key factors does not give a true picture of the overall scenic quality of an area. Often, it is  
37 a number of not so spectacular elements in the proper combination that produces the most  
38 pleasing and memorable scenery—the scarcity factor can be used to recognize this type of  
39 area and give it the added emphasis it should have.
- 40 7. The **cultural modifications** component of the visual quality rating criteria takes into  
41 account any man-made modifications to the landform, water, vegetation, and/or the  
42 addition of man-made structures. Depending on their character, these cultural  
43 modifications may detract from the scenery in the form of a negative intrusion or they may  
44 complement and improve the scenic quality of a view.

1 Based on the above key factors, a visual quality rating system has been developed. Views are rated  
 2 numerically and a total score of visual quality can be tabulated based on the criteria shown in **Table**  
 3 **3.1-2**. The highest score that can be determined for any single criterion is 5, with the exception of  
 4 criteria related to cultural modifications, in which the highest score could be 2. According to BLM’s  
 5 rating system, there are a total of 32 points possible (BLM, 1986). Views that score a total of 19  
 6 points or more are typically considered very high in visual quality. Views that score a total of 15 to  
 7 18 points are typically considered to have a high level of visual quality. Views that score a total of  
 8 12 to 15 points are typically considered to have an above-average level of visual quality. Finally,  
 9 views that score a total of 11 points or less are typically considered to have average visual quality.  
 10 See Table 3.1-2 for the point values associated with the various criteria.

**TABLE 3.1-2  
SCENIC QUALITY INVENTORY AND EVALUATION CHART**

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

**TABLE 3.1-2  
SCENIC QUALITY INVENTORY AND EVALUATION CHART**

Key Factors	Rating Criteria and Score					
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony.		Modifications add little or no visual variety to the area, and introduce no discordant elements.		Modifications add variety but are very discordant and promote strong disharmony.	
	Score	2	Score	0	Score	-4

1

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

9 Projects that create a high level of contrast to the existing visual character of a project setting are  
10 more likely to generate adverse visual impacts due to visual incompatibility. Conversely, projects  
11 that create a low level of contrast to the existing visual character are less likely to generate adverse  
12 visual impacts due to inherent visual compatibility. On this basis, project modifications are  
13 quantified and evaluated for impact assessment purposes. It should be noted that the KOPs selected  
14 for the project include views of the proposed solar facility site, and not the proposed gen-tie route  
15 options and study area (a photograph of a standard monopole anticipated for construction of the  
16 gen-tie line can be found in Figure 3.1-8). Therefore, the analysis and ratings from the respective  
17 KOPs is for the proposed solar facility.

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

- 24 • **Significant and Unavoidable Impact:** Any impact that could potentially lower the visual  
25 quality of an identified sensitive viewpoint by 2 points or more, and for which no feasible  
26 or effective mitigation can be identified.
- 27 • **Less-than-Significant Impact with Mitigation Incorporated:** Any impact that could  
28 potentially lower the visual quality of an identified sensitive viewpoint by 2 points or more,  
29 but can be reduced to less than 2 points with mitigation incorporated. Therefore, specific  
30 mitigation measures are provided to reduce the impact to a less-than-significant level.
- 31 • **Less-than-Significant Impact:** Any impact that could potentially lower the visual quality  
32 of an identified sensitive viewpoint by 1 point or less. In visual impact analysis, a less-

1 than-significant impact usually occurs when a project’s visual modifications can be seen  
2 but do not dominate, contrast with, or strongly degrade a sensitive viewpoint.

- 3 • **No Impact:** The project would not have an impact from an identified sensitive viewpoint.  
4 In visual impact analysis, there is no impact if the project’s potential visual modifications  
5 cannot be seen from an identified sensitive viewpoint.

### 6 **3.1.2.2 Determination of Impacts/Thresholds of Significance**

7 For this analysis, a significant impact to aesthetics would occur it would result in any effects listed  
8 below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14  
9 CCR 15000 et seq.), and standards of professional practice.

- 10 • Have a substantial adverse effect on a scenic vista;
- 11 • Substantially damage scenic resources, including, but not limited to, trees, rock  
12 outcroppings, and historic buildings within a state scenic highway;
- 13 • Substantially degrade the existing visual character or quality of the site and its  
14 surroundings; or
- 15 • Create a new source of substantial light or glare that would adversely affect daytime or  
16 nighttime views in the area.

17 The lead agency determined in the NOP (see Appendix A) that the following environmental issue  
18 areas would result in no impacts or less-than-significant impacts and were therefore scoped out of  
19 requiring further review in this EIS/EIR. Please refer to Appendix A of this EIS/EIR for a copy of  
20 the NOP and additional information regarding these issue areas.

- 21 • Have a substantial adverse effect on a scenic vista.
- 22 • Substantially damage scenic resources, including, but not limited to, trees, rock  
23 outcroppings, and historic buildings within a state scenic highway.

## 24 **3.1.3 Analysis of Environmental Effects**

### 25 **3.1.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)**

#### 26 ***NEPA: Environmental Impacts***

##### 27 **Construction**

28 Construction of the Proposed Action would cause direct temporary visual impacts due to the  
29 presence of equipment, materials, and workforce. These impacts would occur throughout the  
30 development area including the proposed gen-tie routes. Construction would involve the use of  
31 cranes, other heavy construction equipment, temporary storage and office facilities, and temporary  
32 laydown/staging areas. Construction would include site clearing and grading, construction of the  
33 solar generating facilities, construction of the gen-tie and communications line, as well as site  
34 cleanup and restoration. An increase in temporary construction traffic would also occur, as  
35 described in Section 3.15, *Transportation*. Indirect impacts to aesthetics during construction would  
36 include grading activities generating dust clouds, which can be visually distracting if not controlled

1 properly. Construction activities at the solar facility site would be visible from SR 14, Sierra  
2 Highway, and Trotter Avenue. The solar facility site and gen-tie line would be under active  
3 construction during the 24-month construction period. It is anticipated that construction activity  
4 would take place during the day, Monday through Friday. However, in order to meet schedules or  
5 avoid work during the hottest temperatures of the day, non-daylight work may be necessary.  
6 Overall, construction-related impacts would be temporary and would not result in an adverse effect  
7 to aesthetic resources. To ensure that adverse construction lighting effects do not occur, Mitigation  
8 Measure MM 3.1-1a for the solar facility portion of the project site, and Mitigation Measure MM  
9 3.1-3b for the gen-tie portion of the site, below, have been recommended to reduce impacts  
10 associated with potential night lighting.

11 **Operation and Maintenance**

12 To determine whether the Proposed Action would substantially degrade the existing visual quality  
13 of the site during the operations and maintenance phase, this analysis compares the existing visual  
14 setting with simulated portrayals of the post-project visual conditions from selected KOPs. These  
15 KOPs are representative of views that would be experienced from nearby sensitive receptor  
16 locations. As discussed under “Selection of Key Observation Points,” the process of identifying  
17 KOPs focused on selecting viewpoints that could be used to accurately represent views from a  
18 broader range of viewpoints, particularly viewpoints from area sensitive receptors. Visual  
19 simulations are provided in **Figures 3.1-2** through **3.1-7**. The KOPs and their associated sensitive  
20 receptor locations are described in **Table 3.1-3**.

21  
22

**TABLE 3.1-3  
KOPs AND SENSITIVE RECEPTORS FOR ALTERNATIVE A**

Sensitive Receptor	KOP #
1 Motorists driving south on Lone Butte Road and residences to the north and east	1
2 Motorists driving north on Sierra Highway	2
3 Motorists driving south on 20th Street and residences to the north	3

23  
24



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-2: ALTERNATIVE A SIMULATION OF KOP 1 VIEW LOOKING SE FROM LONE BUTTE RD AND TROTTER AVE**



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-3: ALTERNATIVE A SIMULATION OF KOP 2 VIEW LOOKING NORTHEAST FROM SIERRA HIGHWAY**



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-4: ALTERNATIVE A SIMULATION OF KOP 3 VIEW LOOKING SOUTH FROM TROTTER AVENUE AND 20TH STREET**



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-5: ALTERNATIVE B SIMULATION OF KOP 1 VIEW LOOKING SE FROM LONE BUTTE RD AND TROTTER AVE**



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-6: ALTERNATIVE B SIMULATION OF KOP 2 VIEW LOOKING NORTHEAST FROM SIERRA HIGHWAY**



Existing (pre-development) view



Simulated (post-development) view

**Figure 3.1-7: ALTERNATIVE B SIMULATION OF KOP 3 VIEW LOOKING SOUTH FROM TROTTER AVENUE AND 20TH STREET**

1 The visual quality of the project site and surrounding areas generally consists of open space with  
2 desert vegetation. Expansive views of hills to the north and west are visible from much of the area.  
3 The visual character is largely rural and undeveloped, with scattered residential, commercial, and  
4 industrial uses such as roads, wind power generation, substations, and transmission lines. Sensitive  
5 receptors in the vicinity of the site include motorists and residences. The pre- and post-development  
6 views are presented in Figures 3.1-2 through 3.1-4. A photograph of a standard monopole  
7 anticipated for construction of the gen-tie line can be found in **Figure 3.1-8**.

8 The proposed project would also include construction of an overhead 230 kV gen-tie line from the  
9 proposed solar facility to a point of interconnection where power generated by the project can be  
10 delivered to the grid. Gen-tie lines would be carried overhead on utility poles ranging from 100 to  
11 180 feet in height and would cover a total approximate distance of a 16 miles. The presence of these  
12 vertical elements would add man-made elements in the landscape that currently do not exist,  
13 resulting in significant aesthetic impacts. Mitigation Measures MM 3.1-1a through MM 3.1-3a for  
14 the solar facility portion of the project site, and Mitigation Measures MM 3.1-1b through MM 3.1-  
15 3b for the gen-tie portion of the site, are incorporated to reduce visual impacts. However, because  
16 there are no feasible mitigation measures that can be implemented to preserve the existing open  
17 space landscape character at the project site while at the same time developing a solar energy  
18 facility, impacts to visual resources would be significant and unavoidable, despite implementation  
19 of these mitigation measures.

20 *KOP 1 – View Looking Southeast from the intersection of Lone Butte Road and Trotter Avenue*

21 Figure 3.1-2 depicts the view looking southeast from the intersection of Lone Butte Road and  
22 Trotter Avenue at a distance of approximately 75 feet from the project boundary, in the foreground-  
23 middleground distance zone. The existing view shows an undeveloped desert landscape that is  
24 relatively flat and contains low-lying shrub vegetation with a few Joshua trees. An existing chain-  
25 link fence and transmission line are in the foreground. Hills and mountains are visible in the  
26 background, but are partially screened by the chain-link fence, which rises above the ridgeline in  
27 places. However, the chain-link fence is transparent enough that hills and mountains are visible.  
28 The simulation reveals that the project would be dominant in the foreground-middleground and  
29 would replace the existing natural and undeveloped desert landscape, and would partially block the  
30 view of the mountains in the background. Although it is not depicted in the simulation, the proposed  
31 substation and gen-tie line would also be visible from KOP 1, which (in combination with the  
32 proposed solar arrays) would attract attention and dominate the landscape. A photograph of a  
33 standard monopole anticipated for construction of the gen-tie line can be found in Figure 3.1-8).  
34 The simulation from this KOP represents views that motorists and nearby residents viewing the  
35 Proposed Action would experience along the northwestern boundary. The viewer is at an elevation  
36 that is relatively level with the Proposed Action site; while views could be brief for motorists, they  
37 would be of longer duration for adjacent residents. Since the Proposed Action would create  
38 dominant contrasting features in the landscape, as viewed from KOP 1, an adverse effect to visual  
39 resources would occur.

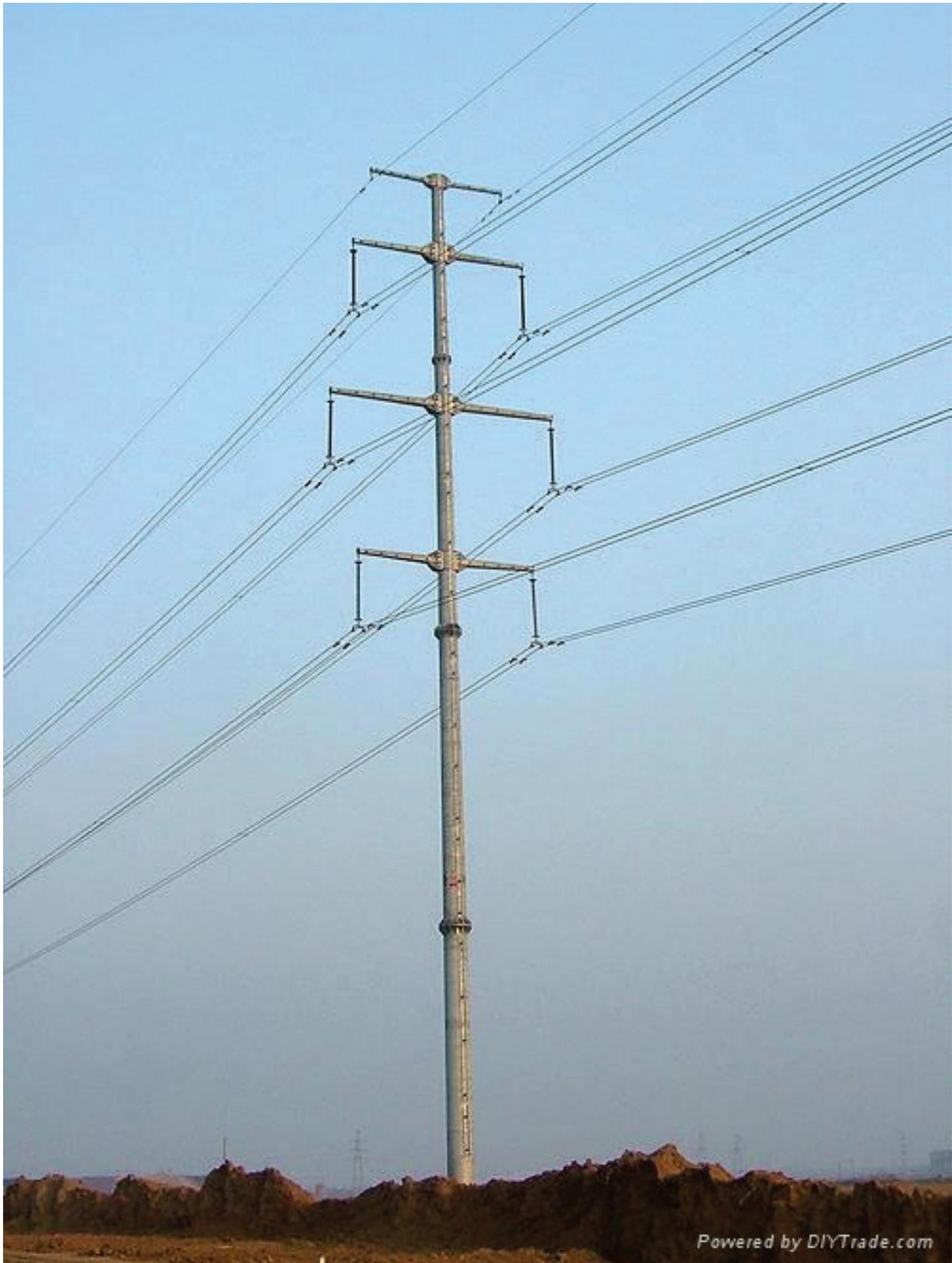


Figure 3.1-8: TYPICAL STEEL MONOPOLE TOWER

1 *KOP 2 – View Looking Northeast from Sierra Highway*

2 Figure 3.1-3 depicts the view looking northeast from Sierra Highway at a distance of approximately  
3 0.5 miles from the project boundary, in the foreground-middleground viewing distance. The  
4 simulation from this KOP represent views that motorists viewing the Proposed Action from the  
5 western boundary would experience. The existing view shows a largely undeveloped landscape  
6 that is relatively flat and contains low-lying shrub vegetation. A dark-colored horizontal band  
7 created by the railroad lies parallel to the road and is irregularly broken up, or screened, by shrub  
8 vegetation. A tan-and-cream-colored building surrounded by medium-height trees is on the left side  
9 of the view. Wooden fence posts parallel the railroad tracks and transmission line poles are visible  
10 in the distance. There are also low-lying hills to the northeast, but they are not formidable enough  
11 to create an enclosed landscape. The simulation reveals that although the viewer is at an elevation  
12 that is relatively level with the project site, the Proposed Action would not be visible, and no  
13 changes would occur to existing views. The solar site would not be observable after development.  
14 Therefore, the Proposed Action as viewed from KOP 2 would not create an adverse effect to visual  
15 resources.

16 *KOP 3 – View Looking South from Trotter Avenue and 20th Street*

17 Figure 3.1-4 depicts the view looking south from Trotter Avenue and 20th Street at a distance of  
18 approximately 30 feet from the Proposed Action boundary, in the foreground-viewing distance.  
19 The simulation from this KOP represent views that motorists and nearby residents viewing the  
20 Proposed Action would experience along the northern boundary. The existing view shows an  
21 existing chain-link fence and transmission pole are in the foreground. An undeveloped desert  
22 landscape is relatively flat and contains low-lying shrub vegetation with a few Joshua trees is seen  
23 beyond the fence, while hills and mountains are visible in the foreground-background viewing  
24 distances, but are partially screened by the chain-link fence, which rises above the ridgeline.  
25 However, the chain-link fence is transparent enough that they are visible. The simulation reveals  
26 that the project would be dominant in the foreground-middleground and would replace the existing  
27 natural and undeveloped desert landscape, and partially block the view of the mountains in the  
28 background. The viewer is at an elevation that is relatively level with the Proposed Action and  
29 while views from KOP 3 could be brief for motorists, they would be of longer duration for adjacent  
30 residents. The Proposed Action, as viewed from KOP 3, would create a dominant contrasting  
31 feature in the landscape which would create an adverse effect to visual resources.

32 *Light*

33 As described in more detail in Chapter 2, *Proposed Action, Project Description, and Alternatives*,  
34 of this EIS/EIR, the proposed solar facility would include safety and security lighting. The lighting  
35 system for the solar facility provided for operation and maintenance personnel would be designed  
36 to provide the minimum illumination needed to achieve safety and security objectives. Lighting  
37 would be provided at the electrical enclosures, onsite buildings, and the main access road entrance.  
38 Lighting would be limited so that light spillover on the adjacent properties would be minimal. If  
39 lighting at individual solar panels or other equipment is needed for night maintenance, portable  
40 lighting would be used. All lighting would be directed downward and shielded to focus illumination  
41 on the desired areas, in compliance with the Kern County Dark Skies Ordinance Restrictions on  
42 light fixture height are also imposed by the ordinance. If improperly designed or oriented, such

1 lighting may result in light trespass that falls outside the boundaries of the site. Under particularly  
2 adverse conditions, spillover lighting causes annoyance, discomfort, or loss in visual performance  
3 because of its intensity, direction, or source type and visibility.

4 Effects resulting from lighting would be minimized through compliance with all development  
5 standards, the Kern County Zoning Ordinance, and the goals, policies, and implementation  
6 measures of the Kern County General Plan. Compliance with the Dark Skies Ordinance would be  
7 required. In addition, the implementation of Mitigation Measure MM 3.1-1a for the solar facility  
8 portion of the project site, and Mitigation Measure MM 3.1-3b for the gen-tie portion of the site,  
9 would minimize the potential for spillover lighting to adversely affect residents and motorists to  
10 reduce adverse effects.

#### 11 *Glare*

12 Reflection of sunlight is the primary potential producer of glare from reflecting off the glass  
13 surfaces of solar panels. The properties of glare are further discussed in Chapter 3.4, *Airspace*  
14 *Management and Use*, of this EIS/EIR.

15 As described in Chapter 2, *Proposed Action, Project Description, and Alternatives*, of this EIS/EIR,  
16 the Proposed Action may use trackers. Trackers allow the panels to follow the sun in its path from  
17 east to west across the southern sky as the day progresses. These devices orient the solar panels  
18 perpendicular to the incident solar radiation, thereby maximizing solar cell efficiency and potential  
19 energy output. Some of these tracking devices use GPS technology, which enables the tracking to  
20 be extremely accurate, and are capable of positioning the array so that the incident rays would be  
21 at or very near a surface normal (perpendicular angle). During midday conditions, when the sun is  
22 high in the sky, the law of reflection indicates that the reflected ray would be at an equally low  
23 angle and reflected in a direction toward the light source or back into the atmosphere away from  
24 receptors on the ground. When the sun is low on the horizon (near dawn or dusk), the sun's angle  
25 in the sky is low; however, reflected rays would still be directed away from ground-level receptors.

26 As discussed in Section 3.4.2.2 of this EIR, the panels would not be expected to cause visual  
27 discomfort or impairment of vision for residents because the panels are designed to absorb as much  
28 sunlight as possible and therefore would have minimal reflectivity. The type of glare that could be  
29 expected in the most extreme conditions, when the sun is low in the sky, is a level of veiling  
30 reflection that may cause viewers to be less able to distinguish levels of contrast, but not cause a  
31 temporary loss of vision. Additionally, for some residents in the viewshed of the proposed project,  
32 glare effects would be further reduced by intervening elements, such as vegetative screening  
33 created by mature landscape trees, ornamental planting, and other homes or structures, which would  
34 obstruct views of the panels. Therefore, the Proposed Action would not result in adverse effects  
35 related to glare for residences in the vicinity of the Proposed Action.

36 Similarly, and also because of their low reflectivity, the panels would not be expected to cause  
37 visual impairment for motorists on area roadways. Effects on eastbound motorists would likely be  
38 greatest in the early evening hours, when the sun is at its lowest arc in the western horizon. Glare  
39 would have its greatest impact on westbound travelers in the early morning hours, when the sun is  
40 rising in the east. Nonetheless, regardless of their position relative to the sun and the time of day,

1 the panels would not be expected to cause visual impairment for motorists. Therefore, the Proposed  
2 Action would not result in adverse effects related to glare affecting motorists.

3 Other glare effects could result if onsite structures, such as the substations, are covered with  
4 reflective materials. However, implementation of Mitigation Measure MM 3.1-2a would minimize  
5 such glare effects for the solar facility portion of the proposed project. As discussed in Chapter 3.4,  
6 *Airspace Management*, the FAA and the Air Force expects the proposed solar panels to have little,  
7 if any, impact with respect to glare. Because of the inherently low reflectivity of PV panels, in  
8 addition to compliance with the goals, policies, and implementation measures of the Zoning  
9 Ordinance and General Plan and with implementation of Mitigation Measure MM 3.1-2a, the  
10 Proposed Action would not have an adverse effect relating to glare affecting motorists and  
11 residents.

## 12 **Decommissioning**

13 At the completion of the 35-year lease for solar generating facilities, Air Force may renew the lease  
14 or require the developer to decommission the solar facility. The solar modules, gen-tie line and all  
15 other improvements would be dismantled and removed. Effects from decommissioning facilities  
16 are typically similar to those described for construction of the facilities. However, if the site is not  
17 restored, the removal of facilities can create a strong visual contrast from grading, disturbed soil  
18 areas, in comparison to undisturbed soil areas in the vicinity of the project site. These changes  
19 would result in visually dominant and contrasting features at the site, creating an adverse effect to  
20 visual resources. In addition, revegetation in this desert region is difficult and generally of limited  
21 success, thus, visual recovery from land disturbance of closure and decommissioning would likely  
22 occur only over a long period of time. However, Mitigation Measures MM 3.1-2b for the gen-tie  
23 portion of the project site, and Mitigation Measure MM 3.5-4a for the solar facility portion of the  
24 project, would require revegetation plans and are recommended to achieve site restoration over a  
25 long period. Because restoration activities would occur over an unknown long period of time,  
26 decommissioning of the Proposed Action would create an adverse effect to visual resources.

## 27 **CEQA: Impact Significance Determination**

### 28 **Impact 3.1-1: Substantially degrade the existing visual character or quality of the site and** 29 **its surroundings.**

30 As noted in Section 3.1.4, *Environmental Consequences*, a modified version of the BLM VRM  
31 method was used for visual assessment of the entire project site (BLM, 1984). The description of  
32 impacts resulting from construction, operation, and decommissioning are discussed in the previous  
33 NEPA section, in addition to the KOPs. The Visual Quality Rating Analysis assesses the pre- and  
34 post-development views from each KOP to determine the level of impact significance for CEQA  
35 is included in **Tables 3.1-4 through 3.1-6.**

**TABLE 3.1-4  
VISUAL QUALITY RATING ANALYSIS – KOP 1**

**Sensitive Receptor:** Motorists to the north, on Lone Butte Road and Trotter Avenue, residents to the north and east  
Pre-development and post-development condition in Figure 3.1-2

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Landform</b>	2	1	1	Less-Than-Significant
<i>Explanation:</i>	Site and vicinity are flat, but hills in the background form an important element of the view.	The proposed project would not modify the area's terrain.		
<i>Detail:</i>	In both pre- and post-development views, flat landforms predominate with hills visible in the background. Because there would be no significant change to the landforms on the project site.			
<b>Vegetation</b>	3	1	2	Potentially Significant
<i>Explanation:</i>	Joshua trees add interesting form and texture. Low-lying desert vegetation is sparse and intermixed with barren desert lands.	The project would remove and obscure existing vegetation in the foreground-middleground.		
<i>Detail:</i>	Both the pre- and post-development views show Joshua trees, which add interest in form and texture to sparse, low-lying desert vegetation intermixed with barren desert lands. Vegetation forms an important element of the views from this viewpoint, and the project would remove all of the vegetation within the view.			
<b>Water</b>	0	0	0	No Impact
<i>Explanation:</i>	No water is present on the site or in the vicinity.	No water would be introduced to the site or their vicinity.		
<i>Detail:</i>	Neither pre- nor post-development views include any water features.			
<b>Color</b>	2	1	1	Less-Than-Significant
<i>Explanation:</i>	Generally muted colors with some variety.	The project would appear as a darker element in the foreground-middleground.		
<i>Detail:</i>	The pre-development view shows muted tones of gold, gray, and green. The project would add a monotone dark gray color with elements of silver and light gray.			
<b>Adjacent Scenery</b>	2	1	1	Potentially Significant
<i>Explanation:</i>	Adjacent scenery moderately enhances the view through the presence of hills to the southeast.	Adjacent scenery, including hills to the southeast, would be partially obscured by the solar panels and substation.		
<i>Detail:</i>	Adjacent scenery consists of flat lands with mixed desert vegetation in the foreground-middleground and hills in the background. The proposed project would partially block views of adjacent scenery, resulting in a potentially significant impact.			
<b>Scarcity</b>	1	1	0	Less-Than-Significant
<i>Explanation:</i>	Similar viewsheds throughout the region. No unique or unusual aspects.	Viewshed would be modified by industrial development.		
<i>Detail:</i>	Views offered by the pre-development are typical of the Antelope Valley area and are not unique or unusual; therefore, modifying the existing conditions to implement the project would not result in significant change in the scarcity criterion.			

**TABLE 3.1-4  
VISUAL QUALITY RATING ANALYSIS – KOP 1**

**Sensitive Receptor:** Motorists to the north, on Lone Butte Road and Trotter Avenue, residents to the north and east  
Pre-development and post-development condition in Figure 3.1-2

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Cultural Modifications</b>	-1	-4	3	<b>Potentially Significant</b>
<i>Explanation:</i>	Man-made modifications in this view include roads, transmission lines, and chain-link fence.	The project would add manmade modifications to the viewshed, including a solar field, substation and 230 kV transmission line that would add to manmade modifications. This would continue to be discordant and disharmonious with existing views.		
<i>Detail:</i>	Cultural modifications have a slightly negative impact on the pre-development view. Features such as the transmission line and chain-link fence contribute to the impact. These elements are somewhat discordant and disharmonious with the characteristic landscape. The proposed project would introduce geometric forms that are more vertical and obstructive to the surrounding scenery in comparison to the pre-development condition.			
<b>Totals:</b>	9	1	8	<b>Potentially Significant</b>

1

**TABLE 3.1-5  
VISUAL QUALITY RATING ANALYSIS – KOP 2**

**Sensitive Receptor:** Motorists to the south, on Sierra Highway pre-development and post-development condition on Figure 3.1-3

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Landform</b>	2	1	1	<b>Less-Than-Significant</b>
<i>Explanation:</i>	Site and vicinity are flat, with varied terrain (hills) in the background.	The proposed project would not modify the area's terrain.		
<i>Detail:</i>	In both pre- and post-development views, flat landforms predominate with hills visible in the background. Because there would be no significant change to the landforms on the project sites.			
<b>Vegetation</b>	2	2	0	<b>Less-Than-Significant</b>
<i>Explanation:</i>	Vegetation is a mix of low-lying desert shrubs and trees at a residence/building.	Due to the distance of the project from KOP 2, the project would not have a substantial impact on views of vegetation. The project would replace vegetation on the site with solar fields and ancillary facilities, but it would not be immediately perceptible to motorists.		
<i>Detail:</i>	Both the pre- and post-development views show low-lying desert shrub vegetation. The proposed project would remove all of the vegetation within the project area, but the vegetation in the immediate foreground would remain intact.			

**TABLE 3.1-5  
VISUAL QUALITY RATING ANALYSIS – KOP 2**

**Sensitive Receptor:** Motorists to the south, on Sierra Highway pre-development and post-development condition on Figure 3.1-3

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Water</b>	0	0	0	No Impact
<i>Explanation:</i>	No water is present on the site or in the vicinity.	No water would be introduced to the site or their vicinity.		
<i>Detail:</i>	Neither pre- nor post-development views include any water features.			
<b>Color</b>	1	1	0	Less-Than-Significant
<i>Explanation:</i>	Generally muted colors with little variety.	Because of the distance of the project from KOP 2, the project would not have a substantial effect on color, and would remain a muted gray tone in the background.		
<i>Detail:</i>	Both pre- and post-development views show muted colors and little variety or contrast. The existing desert vegetation is a consistent color which does not create contrast or variety. In the post-development view, there is little to no change due to the project's distance and viewing angle from KOP 2.			
<b>Adjacent Scenery</b>	2	2	0	Less-Than-Significant
<i>Explanation:</i>	Adjacent scenery moderately enhances the view through the presence of hills to the northeast.	Adjacent scenery, including hills to the northeast, would remain visible.		
<i>Detail:</i>	Adjacent scenery, including hills in the background, is visible in both pre- and post-development views.			
<b>Scarcity</b>	1	1	0	Less-Than-Significant
<i>Explanation:</i>	Similar viewsheds throughout the region. No unique or unusual aspects.	Viewshed would be modified by industrial development.		
<i>Detail:</i>	Views offered by the pre-development are typical of the Antelope Valley area and are not unique or unusual; therefore, modifying the existing conditions to implement the project would not result in significant changes to the scarcity criterion.			
<b>Cultural Modifications</b>	-1	-1	0	Less-Than-Significant
<i>Explanation:</i>	Manmade modifications in this view include roads, railroad line, transmission lines, a wooden post fence, and a building.	Although the project would add cultural modifications to the site, here are no substantial changes seen from this view due to the KOP's distance and viewing angle from the project.		
<i>Detail:</i>	The pre-development view shows cultural modifications that add little or no visual variety to the area, and very few discordant elements. The post-development view, in comparison, is the same from KOP 2's viewing angle, as cultural modifications from the proposed project cannot be seen.			
<b>Totals:</b>	7	6	1	<b>Less-Than-Significant</b>

**TABLE 3.1-6  
VISUAL QUALITY RATING ANALYSIS – KOP 3**

**Sensitive Receptor:** Motorists and residents to the north, on Trotter Avenue and 20th Street pre-development and post-development condition on Figure 3.1-4

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Landform</b>	2	1	1	Less-Than-Significant
<i>Explanation:</i>	Site and vicinity are flat, but hills in the background form an important element of the view.	The Proposed Action would not modify the area's terrain.		
<i>Detail:</i>	In both pre- and post-development views, flat landforms predominate with hills visible in the background. There would be no significant change to the landforms on the project sites.			
<b>Vegetation</b>	3	1	2	Potentially Significant
<i>Explanation:</i>	Joshua trees add interesting form and texture. Low-lying desert vegetation is sparse and intermixed with barren desert lands.	The project would remove and obscure existing vegetation in the foreground-midground.		
<i>Detail:</i>	Both the pre- and post-development views show Joshua trees, which add interest in form and texture to sparse, low-lying desert vegetation intermixed with barren desert lands. Vegetation forms an important element of the views from this viewpoint, and the project would remove all of the vegetation within the view.			
<b>Water</b>	0	0	0	No Impact
<i>Explanation:</i>	No water is present on the site or in the vicinity.	No water would be introduced to the site or their vicinity.		
<i>Detail:</i>	Neither pre- nor post-development views include any water features.			
<b>Color</b>	2	1	1	Less-Than-Significant
<i>Explanation:</i>	Generally muted colors with some variety.	The project would appear as a darker element in the foreground-midground.		
<i>Detail:</i>	The pre-development view shows muted tones of gold, gray, and green. The project would add a monotone dark gray color with elements of silver and light gray.			
<b>Adjacent Scenery</b>	3	1	2	Potentially significant
<i>Explanation:</i>	Adjacent scenery moderately enhances the view through the presence of hills to the southeast.	Adjacent scenery, including hills to the southeast, would be partially obscured by the solar panels and substation.		
<i>Detail:</i>	Adjacent scenery consists of flat lands with mixed desert vegetation in the foreground-midground and hills in the background. The Proposed Action would partially block views of adjacent scenery.			
<b>Scarcity</b>	1	1	0	Less-Than-Significant
<i>Explanation:</i>	Similar viewsheds throughout the region. No unique or unusual aspects.	Viewshed would be modified by industrial development.		
<i>Detail:</i>	Views offered by the pre-development are typical of the Antelope Valley area and are not unique or unusual; therefore, modifying the existing conditions to implement the project would not result in a substantial change to the scarcity criterion.			

**TABLE 3.1-6  
VISUAL QUALITY RATING ANALYSIS – KOP 3**

**Sensitive Receptor:** Motorists and residents to the north, on Trotter Avenue and 20th Street pre-development and post-development condition on Figure 3.1-4

Rated Feature	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
<b>Cultural Modifications</b>	-1	-4	3	<b>Potentially Significant</b>
<i>Explanation:</i>	Man-made modifications in this view include roads, transmission lines, and chain-link fence.	The project would add man-made modifications to the viewshed, including a solar field that would add to man-made modifications. This would continue to be discordant and disharmonious with existing views.		
<i>Detail:</i>	Cultural modifications have a slightly negative impact on the pre-development view. Features such as the transmission line and chain-link fence contribute to the impact. These elements are somewhat discordant and disharmonious with the characteristic landscape. The proposed project would introduce geometric forms that are more vertical and obstructive to the surrounding scenery in comparison to the pre-development condition.			
<b>Totals:</b>	10	1	9	<b>Potentially Significant</b>

1

2 **Construction**

3 As described in the NEPA analysis above, direct impacts associated with construction would  
4 include the presence of construction equipment, materials, workforce/traffic, as well as grading and  
5 vegetation clearing activities; indirect impacts would include grading activities generating dust  
6 clouds, which can be visually distracting if not controlled properly. Construction activities would  
7 be visible from SR 14, Sierra Highway, Trotter Avenue, and along the selected gen-tie route during  
8 the 24-month construction period. However, overall construction-related impacts would be  
9 temporary. It is anticipated that construction activity would take place during the day, Monday  
10 through Friday. However, nighttime work may be necessary. To reduce temporary construction  
11 lighting impacts, Mitigation Measure MM 3.1-1a for the solar facility portion of the project site,  
12 and Mitigation Measure MM 3.1-3b for the gen-tie portion of the site have been recommended;  
13 impacts associated with construction of the project would be less than significant.

14 **Operation and Maintenance**

15 Although implementation of the project (specifically the solar facility) would introduce an  
16 industrial visual character into the viewshed as seen from all the KOPs for the life of the project,  
17 as shown in Tables 3.1-4 through 3.1-6, all KOPs have an “average” visual quality rating according  
18 to the using the BLM rating scale; as discussed in the “Rating Visual Quality” section, views with  
19 a pre-development score of 11 or fewer points are considered average. As shown in Tables 3.1-4  
20 and 3.1-6, implementation of the project would result in potentially significant impacts as viewed  
21 from KOPs 1 and 3, resulting from a substantial change to the site’s visual quality and visual  
22 character. Specifically, the project site’s visual quality, currently undeveloped desert and rural  
23 lands, would be altered by the addition of solar panels, mechanical equipment, transmission lines,

1 substations, and other facilities on up to 4,000 acres. Site specific impacts to visual character would  
2 be significant and unavoidable.

3 The proposed project would also include construction of an overhead 230 kV gen-tie line from the  
4 proposed solar facility. Gen-tie lines would be carried overhead on utility poles ranging from 100  
5 to 200 feet in height and would cover a total approximate distance of a 14 miles. The presence of  
6 these vertical elements would add man-made elements in the landscape that currently do not exist,  
7 resulting in significant aesthetic impacts. Mitigation Measures MM 3.1-1a through MM 3.1-3a for  
8 the solar facility portion of the project site, and Mitigation Measures MM 3.1-1b through MM 3.1-  
9 3b for the gen-tie portion of the site, are incorporated to reduce visual impacts. However, because  
10 there are no feasible mitigation measures that can be implemented to preserve the existing open  
11 space landscape character at the project site while at the same time developing a solar energy  
12 facility, impacts to the existing visual character or quality of the site and its surroundings would be  
13 significant and unavoidable, despite implementation of these mitigation measures.

14 For site specific visual impacts, Mitigation Measure MM 3.1-2b would incorporate landscaping as  
15 outlined in a revegetation plan for the gen-tie portion of the project site, and Mitigation Measure  
16 MM 3.1-3a for the solar facility portion of the project site, and Mitigation Measure MM 3.1-2b for  
17 the gen-tie portion of the site, would require the developer to clear stockpiled debris from the  
18 project area at least twice per year.

### 19 **Decommissioning**

20 As described above in the NEPA analysis, if the lease for solar generating facilities is not renewed,  
21 the developer may be required to decommission the solar facility. Removal of the solar facilities,  
22 gen-tie line, related infrastructure and grading can result in visually dominant and contrasting  
23 features if the site is not restored. Although successful revegetation can be difficult to achieve,  
24 Mitigation Measure MM 3.1-1b, which require a revegetation plan for the gen-tie portion of the  
25 site, and Mitigation Measure MM 3.5-4a (Vegetation Salvage and Restoration Plan) are  
26 recommended to achieve site restoration for the solar facility portion of the site, over a long period  
27 of time. Because restoration activities would occur over an unknown long period of time, impacts  
28 would be significant and unavoidable.

### 29 **Mitigation Measures**

30 Implement Mitigation Measures MM 3.1-1a through MM 3.1-3a, MM 3.1-1b through MM 3.1-3b,  
31 and MM 3.5-4a (see Sections 3.1.5 and 3.5.5 for mitigation measures).

### 32 **Level of Significance after Mitigation**

33 Impacts would be significant and unavoidable.

### 34 **Impact 3.1-2: Create a new source of substantial light or glare that would adversely affect** 35 **day or nighttime views in this area.**

### 36 **Construction, Operation and Maintenance and Decommissioning**

37 Regarding night lighting conditions—as well as daytime glare conditions—“light” refers to  
38 artificial light emissions, or the degree of brightness, generated by a given source. The Illuminating

1 Engineering Society of North America (IES, 2000) defines “glare” as the sensation produced by  
2 luminance in the visual field that is sufficiently greater than the luminance to which the eye has  
3 adapted to cause annoyance, discomfort, or loss of visual performance and visibility.

4 As discussed under the r analysis, lighting provided at the electrical enclosures, onsite buildings,  
5 and the main access road entrance to the solar facility, in addition to lighting for the solar facility  
6 provided for operation and maintenance personnel would be designed to provide the minimum  
7 illumination needed to achieve safety and security objectives. Lighting would be directed  
8 downward, shielded and limited so that light spillover on the adjacent properties would be minimal.  
9 If lighting at individual solar panels or other equipment is needed for night maintenance, portable  
10 lighting would be used. However, under particularly adverse conditions, spillover lighting causes  
11 annoyance, discomfort, or loss in visual performance because of its intensity, direction, or source  
12 type and visibility. All lighting would be to focus illumination on the desired areas, in compliance  
13 with the Kern County Dark Skies Ordinance. Impacts resulting from lighting would be minimized  
14 through compliance with all development standards, the Kern County Zoning Ordinance, and the  
15 goals, policies, and implementation measures of the Kern County General Plan. Compliance with  
16 the Dark Skies Ordinance would be required. In addition, the implementation of Mitigation  
17 Measure MM 3.1-1a for the solar facility portion of the project site, and Mitigation Measure MM  
18 3.1-3b for the gen-tie portion of the site, would minimize the potential for spillover lighting to  
19 adversely affect residents and motorists to a less-than-significant level.

20 With respect to glare impacts, the panels would not be expected to cause extreme visual discomfort  
21 or impairment of vision for residents or motorists because the panels are designed to absorb as  
22 much sunlight as possible and therefore would have minimal reflectivity. The type of glare that  
23 could be expected in the most extreme conditions, when the sun is low in the sky, is a level of  
24 veiling reflection that may cause viewers to be less able to distinguish levels of contrast, but would  
25 not cause a temporary loss of vision. Implementation of Mitigation Measure MM 3.1-2a would  
26 further minimize glare impacts from the solar facility to a less-than-significant level.

### 27 **Mitigation Measures**

28 Implement Mitigation Measures MM 3.1-1a, MM 3.1-3b, and MM 3.1-2a (see Section 3.1.5 for  
29 mitigation measures).

### 30 **Level of Significance after Mitigation**

31 Impacts would be less than significant.

## 32 **3.1.3.2 Alternative B: 1,500-Acre EUL**

### 33 ***NEPA: Environmental Impacts***

#### 34 **Construction**

35 Similar to Alternative A, construction of Alternative B would cause temporary visual impacts due  
36 to the presence of equipment, materials, and workforce. The types of equipment used and  
37 construction activities performed would be the same as those proposed under Alternative A. Like  
38 Alternative A, construction activities may be visible from SR 14, Sierra Highway, Trotter Avenue,  
39 Lone Butte Road, and along the selected gen-tie route. However, Alternative B would only include

1 construction of solar arrays on the western boundary of the site (along Lone Butte Road and eastern  
 2 Trotter Avenue). The closest sensitive receptors to the solar facility under Alternative B would be  
 3 approximately 350 feet, in comparison to approximately 100 feet under Alternative A. Overall,  
 4 construction-related impacts would be temporary, and views of construction equipment and  
 5 vehicles from the KOPs would be limited to the immediate vicinity of the site. As required for  
 6 Alternative A, in order to ensure that adverse construction night lighting effects do not occur under  
 7 Alternative B, Mitigation Measure MM 3.1-1a for the solar facility portion of the project site, and  
 8 Mitigation Measure MM 3.1-3b for the gen-tie portion of the site, have been recommended to  
 9 reduce impacts associated with night lighting.

10 **Operation and Maintenance**

11 The following KOPs are the same as those used for Alternative A and are representative of views  
 12 that would be experienced from numerous sensitive receptor locations. As discussed under  
 13 “Selection of Key Observation Points,” the process of identifying KOPs focused on selecting  
 14 viewpoints that could be used to accurately represent views from a broader range of viewpoints,  
 15 particularly viewpoints from area-sensitive receptors, specifically motorists and residents. Visual  
 16 simulations of Alternative B are provided in Figures 3.1-5 through 3.1-7. KOPs and their associated  
 17 sensitive-receptor locations are described in **Table 3.1-7**.

18 **TABLE 3.1-7**  
 19 **KOPs AND SENSITIVE RECEPTORS FOR ALTERNATIVE B**

Sensitive Receptor	KOP #
1 Motorists driving south on Lone Butte Road and residences to the north and east	1
2 Motorists driving north on Sierra Highway	2
3 Motorists driving south on 20th Street and residences to the north	3

20  
 21 Alternative B is located within the same vicinity as Alternative A and would result in similar  
 22 effects; however, it would require approximately one-third of the area Alternative A would require.  
 23 Expansive views of hills to the north and west are visible from much of the area. The visual  
 24 character of the area is largely rural and undeveloped, with scattered residential, commercial, and  
 25 industrial uses such as roads, substations, and transmission lines.

26 This alternative would utilize the same gen-tie line route options proposed in Alternative A.  
 27 Alternative B would also include construction of an overhead 230 kV gen-tie line from the proposed  
 28 solar facility to a point of interconnection. Gen-tie lines would be carried overhead on utility poles  
 29 ranging from 100 to 180 feet in height and would cover a total approximate distance of a 16 miles.  
 30 The presence of these vertical elements would add man-made elements in the landscape that  
 31 currently do not exist, resulting in significant aesthetic impacts. Mitigation Measures MM 3.1-1a  
 32 through MM 3.1-3a for the solar facility portion of the project site, and Mitigation Measures MM  
 33 3.1-1b through MM 3.1-3b for the gen-tie portion of the site, are incorporated to reduce visual  
 34 impacts. However, because there are no feasible mitigation measures that can be implemented to  
 35 preserve the existing open space landscape character at the project site while at the same time

1 developing a solar energy facility, impacts to visual resources would be significant and  
2 unavoidable, despite implementation of these mitigation measures.

3 A summary of visual changes shown in the simulations is summarized for each KOP  
4 below, consistent with those identified for Alternative A (with the exception of KOP 3;  
5 see Impact 3.1-1).

6 *KOP 1 – View Looking Southeast from Lone Butte Road and Trotter Avenue*

7 The simulation for KOP 1 reveals that the project would be dominant in the foreground-  
8 middleground and would replace the existing natural and undeveloped desert landscape, and would  
9 partially block the view of the mountains in the background. Although it is not depicted in the  
10 simulation, the proposed substation and gen-tie line would also be visible from KOP 1, which (in  
11 combination with the proposed solar arrays) would attract attention and dominate the landscape.  
12 Since the Proposed Action would create dominant contrasting features in the landscape, as viewed  
13 from KOP 1, an adverse effect to visual resources would occur.

14 *KOP 2 – View Looking Northeast from Sierra Highway*

15 The simulation for KOP 2, as shown in Figure 3.1-6, reveals that although the viewer is at an  
16 elevation that is relatively level with the project site, the Proposed Action would not be visible, and  
17 no changes would occur to existing views. The solar site would not be observable after  
18 development. Therefore, the Proposed Action as viewed from KOP 2 would not create an adverse  
19 effect to visual resources.

20 *KOP 3 – View Looking South from Trotter Avenue and 20th Street*

21 Figure 3.1-7 depicts the view looking south from Trotter Avenue and 20th Street. Although KOP  
22 3 for Alternative B is in the same location as KOP 3 for Alternative A, the solar facility associated  
23 with Alternative B is sited further west and would not be visible from KOP 3 (see Figure 3.1-4).  
24 Therefore, no impact would occur.

25 *Light*

26 Impacts resulting from lighting would be similar to those described for Alternative A. However,  
27 Alternative B has a smaller footprint, and would therefore require less lighting. Similar to  
28 Alternative A, if improperly designed or oriented, such lighting may result in light trespass that  
29 falls outside the boundaries of the site. Impacts resulting from lighting would be minimized through  
30 compliance with all development standards; the Kern County Zoning Ordinance; and the goals,  
31 policies, and implementation measures of the Kern County General Plan. Compliance with the  
32 Dark Skies Ordinance would be required. In addition, implementation of Mitigation Measure MM  
33 3.1-1a for the solar facility portion of the project site, and Mitigation Measure MM 3.1-3b for the  
34 gen-tie portion of the site, would minimize the potential for spillover lighting to adversely affect  
35 residents.

36 *Glare*

37 Impacts resulting from glare would be similar to those described in Alternative A. However,  
38 Alternative B has a smaller footprint, project features from which sunlight could be reflected would  
39 occur over a smaller area; therefore, this alternative would result in less glare than Alternative A.

1 Implementation of Mitigation Measure MM 3.1-2a would further minimize glare impacts from the  
2 solar facility.

### 3 **Decommissioning**

4 After the end of its useful life (up to 35 years), Alternative B would require decommissioning and  
5 impacts would be similar to those described for Alternative A. Removal of the solar facilities,  
6 related infrastructure and grading would result in visually dominant and contrasting features if the  
7 site is not restored. Although successful revegetation can be difficult to achieve, Mitigation  
8 Measure MM 3.1-2b, which requires a revegetation plan for the gen-tie portion of the site, and MM  
9 3.5-4a for the solar facility portion of the site (Vegetation Salvage and Restoration Plan) are  
10 recommended to achieve site restoration are recommended to achieve site restoration over a long  
11 period of time. Since restoration activities would occur over an unknown long period of time, an  
12 adverse effect to visual resources would occur.

### 13 **CEQA: Impact Significance Determination**

#### 14 **Construction**

15 Direct and indirect impacts associated with construction would be the same for Alternative B as  
16 those identified for Alternative A and include the presence of construction equipment, materials,  
17 workforce/traffic, as well as grading and vegetation clearing activities. Construction activities  
18 would be visible from SR 14, Sierra Highway, Trotter Avenue, and along the selected gen-tie route  
19 during the 24-month construction period. While impacts to sensitive receptors during construction  
20 would be similar to those discussed for Alternative A, Alternative B would only include  
21 construction of solar arrays on the western boundary of the site (along Lone Butte Road and eastern  
22 Trotter Avenue). Therefore, impacts to sensitive receptors located on Trotter Avenue along the  
23 eastern portion of the site would be reduced.

24 In addition, overall construction-related impacts would be temporary. It is anticipated that  
25 construction activity would take place during the day, Monday through Friday. However, nighttime  
26 work may be necessary. To reduce temporary construction lighting impacts, Mitigation Measure  
27 MM 3.1-1a for the solar facility portion of the project site, and Mitigation Measure MM 3.1-3b for  
28 the gen-tie portion of the site, have been recommended; impacts associated with construction of  
29 the project would be less than significant

#### 30 **Operation and Maintenance**

31 The Visual Quality Rating Analysis from KOP 1 and KOP 2 would be the same for Alternative B  
32 as for Alternative A in Tables 3.1-4 and 3.1-5. Although the footprint of disturbance would be  
33 reduced by more than half, the visual impacts from implementation of the project would be  
34 generally the same. Similar to Alternative A, the industrial nature of the Alternative B solar facility  
35 would change the visual character of the landscape as viewed from KOPs (and sensitive receptors)  
36 for the life of the project. Site specific impacts to visual character would be significant and  
37 unavoidable. As described above for construction impacts, impacts to sensitive receptors during  
38 operation and maintenance would be similar to those discussed for Alternative A; however,  
39 Alternative B would only include construction of solar arrays on the western boundary of the site  
40 (along Lone Butte Road and eastern Trotter Avenue). Therefore, visual impacts to sensitive  
41 receptors located on Trotter Avenue along the eastern portion of the site would be reduced when

1 compared to Alternative A. Specifically, the solar facility would no longer be located within 100  
2 feet of a residence and not visible from KOP 3.

3 For site specific visual impacts, Mitigation Measure MM 3.1-2b would incorporate landscaping for  
4 the gen-tie portion of the site, as outlined in a revegetation plan, and Mitigation Measures MM 3.1-  
5 3a for the solar facility portion of the site, and MM 3.1-3b for the gen-tie portion of the site, would  
6 require the developer to clear stockpiled debris from the project area at least twice per year. The  
7 proposed gen-tie lines and ancillary utility poles, ranging from 100 to 180 feet in height and totaling  
8 a distance of 16 miles, would cause significant and unavoidable impacts to the existing visual  
9 character or quality of the site and its surrounding. Mitigation Measures MM 3.1-1a through MM  
10 3.1-3a for the solar facility portion of the project site, and Mitigation Measures MM 3.1-1b through  
11 MM 3.1-3b for the gen-tie portion of the site, are incorporated to reduce visual impacts. However,  
12 impacts remain significant and unavoidable due to the fact that preserving the open space and  
13 undeveloped character of the project site and region while achieving the goals of the proposed  
14 project is not feasible.

#### 15 *Light and Glare*

16 Impacts related to creating a new source of substantial glare for Alternative B would be similar to  
17 those described for Alternative A (Impact 3.1-2); but overall they would be decreased compared to  
18 Alternative A due to the reduced footprint of Alternative B. If improperly designed or oriented,  
19 Alternative B lighting may result in light trespass that falls outside the site boundaries; however,  
20 implementation of Mitigation Measure MM 3.1-1a for the solar facility portion of the project site,  
21 and Mitigation Measure MM 3.1-3b for the gen-tie portion of the site, would ensure that the  
22 potential for spillover lighting to adversely affect residents and motorists would be reduced to a  
23 less-than-significant level. Implementation of Mitigation Measure MM 3.1-2a for the solar facility  
24 portion of the site, would minimize glare impacts to a less-than-significant level. Implementation  
25 of Mitigation Measure MM 3.1-2a would ensure impacts related to glare would be less than  
26 significant.

#### 27 **Decommissioning**

28 As described above in the NEPA analysis, if the lease for solar generating facilities is not renewed,  
29 the developer may be required to decommission the solar facility and gen-tie line. Removal of the  
30 solar facilities, gen-tie line, related infrastructure and grading would result in visually dominant  
31 and contrasting features if the site is not restored. Although successful revegetation can be difficult  
32 to achieve, Mitigation Measure MM 3.1-2b, which require a revegetation plan for the gen-tie  
33 portion of the site, and MM 3.5-4a for the solar facility (Vegetation Salvage and Restoration Plan)  
34 are recommended to achieve site restoration, over a long period of time. Since restoration activities  
35 would occur over an unknown long period of time, impacts would be significant and unavoidable.

#### 36 **Mitigation Measures**

37 Implement Mitigation Measures MM 3.1-1a through MM 3.1-3a, MM 3.1-1b through MM 3.1-3b,  
38 and MM 3.5-4a (see Sections 3.1.5 and 3.5.5 for mitigation measures).

#### 39 **Level of Significance after Mitigation**

40 Impacts would be significant and unavoidable.

### 3.1.3.3 Alternative C: No Action/No Project

#### **NEPA: Environmental Impacts**

Under Alternative C, none of the components proposed under Alternative A or Alternative B would be built. If Alternative C were implemented, there would be no changes to the visual character of the Proposed Action area. No mitigation is required.

#### **CEQA: Impact Significance Determination**

Alternative C would result in no impacts to visual resources in the Proposed Action area.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Level of Significance after Mitigation**

No impact would occur.

### 3.1.4 Cumulative Impact Analysis

#### **3.1.4.1 NEPA: Cumulative Environmental Effects and Their Significance**

Multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout Kern County and Los Angeles County, particularly in the vicinity of the site in the Mojave Desert and Antelope Valley areas. These have the potential to result in cumulative impacts to aesthetics when considered together with the Proposed Action. The “scarcity” rating criterion is particularly likely to be significantly 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 solar and wind facilities and new transmission lines are constructed.

As the following discussion indicates, the Proposed Action would result in adverse impacts related to visual resources. The other projects in the region would also be required to implement various mitigation measures to reduce impacts. However, the conversion of thousands of undeveloped 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. Therefore, the Proposed Action in combination with other projects in the cumulative scenario would result in an adverse effect to visual resources.

#### **3.1.4.2 CEQA: Cumulative Impact Significance Determination**

Under CEQA, a project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (California Code Regulation, Title 14, Section 15130). This concept is similar to NEPA, which states that cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Section 1508.7). Cumulative effects could result from the construction, operation and maintenance, and decommissioning phases of a project.

1 Cumulative impacts to visual resources would occur where proposed project facilities or activities  
2 occupy the same field of view as other built facilities or impacted landscapes, and an adverse  
3 change in the visible landscape character is perceived. A cumulative impact could also occur if a  
4 viewer perceives that the general visual quality or landscape character of a localized or regional  
5 area is diminished by the proliferation of visible similar structures or construction effects, even if  
6 the changes are not within the same field of view as existing (or future) structures or facilities. The  
7 result is a perceived “industrialization” or “urbanization” of the existing rural or undeveloped  
8 landscape character of a region.

9 There is the potential for substantial future energy development in western Antelope Valley. A list  
10 of the existing and reasonably foreseeable cumulative projects is provided in Table 3-1 and shown  
11 in Figures 3-1 and 3-2.

12 Cumulative impacts to visual resources could occur if implementation of the Proposed Action  
13 would combine with those of other local or regional projects. The Proposed Action is potentially  
14 associated with two types of cumulative impacts:

- 15 • Local cumulative impacts within the viewshed of the project, particularly within the  
16 foreground-middleground viewing distance (up to 5 miles away). In addition, per the BLM  
17 VRM methodology, local projects within background (15 mile) viewing distance of the  
18 proposed project may be seen and may add to the cumulative effects, while projects located  
19 beyond 15 miles are identified as seldom-seen.
- 20 • Regional cumulative impacts beyond the foreground-middleground and background  
21 viewing distances, extending to existing and reasonably foreseeable future solar and other  
22 energy and development projects within western Antelope Valley as a whole. These  
23 projects, while not necessarily located within the same field of view as the proposed  
24 project, would, in combination with the proposed project, contribute to a sense of  
25 industrialization or urbanization of the existing landscape character of the region.

26 The existing landscape within both an approximate 15-mile radius of the proposed project and (and  
27 within the larger Antelope Valley) currently exhibits an undeveloped and rural character, with  
28 mixed industrial and commercial uses. The Alta-Oak Creek-Mojave Wind Project, as identified in  
29 Table 3-1, *Cumulative Projects List*, is located within approximately 15-mile radius of the proposed  
30 project. While wind and solar projects are not the only projects that would contribute to cumulative  
31 visual impacts in the region, their spatially extensive nature and large-scale industrial character  
32 causes their potential cumulative visual effects to eclipse those of most other foreseeable future  
33 projects listed in Table 3-1. The existing wind project listed already accounts for a profoundly  
34 transformed landscape within the area north of Mojave.

35 In addition to the existing wind project discussed above, Table 3-1 lists 54 PV solar applications  
36 and 12 wind project applications in various stages of review or development within the approximate  
37 15-mile radius of the proposed project. There are also two utility corridors proposed along the  
38 northern and western edges of Edwards AFB, adjacent to the project site.

39 If construction at the locally cumulative project locations were to occur at the same time as, or  
40 consecutively before or after, construction of the proposed project, construction activities,

1 equipment and night lighting from these sites would combine with similar activities and equipment  
2 from the proposed project site. Construction of the proposed project and the other cumulative  
3 projects in the immediate project vicinity would lead to the continued presence of construction  
4 equipment on roads and in the landscape in the local project region for several years, and cause a  
5 substantial cumulative visual impact.

6 If the 54 solar PV project applications within 15 miles of the proposed project are realized, they, in  
7 combination with the proposed project, would result in a substantial intensification and spatial  
8 extension of the regional landscape. Twenty-one solar projects in the same area would contribute  
9 further to an industrialization of a predominantly rural character that would dominate and eclipse  
10 the natural basin and range landscape of the project site and vicinity. This cumulative effect would  
11 alter the character of the landscape north, west, and south of the communities of Mojave and  
12 Rosamond. The resulting visual impact would be cumulatively considerable.

13 Cumulative impacts associated with operation of the proposed project or an alternative would  
14 include the impacts associated with operational lighting. As required by the Kern County Dark  
15 Skies Ordinances, and Mitigation Measure MM 3.1-1a for the solar facility portion of the project  
16 site, and Mitigation Measure MM 3.1-3b for the gen-tie portion of the site, lighting of the proposed  
17 project would be shielded and directed downward. Restrictions on light fixture height are also  
18 imposed by the ordinance. If improperly designed or oriented, such lighting may result in light  
19 trespass that falls outside the boundaries of the site. The other projects in the region would also be  
20 required to implement various mitigation measures to reduce lighting impacts. However, the  
21 conversion of thousands of acres in a presently rural area to solar and wind energy production uses  
22 cannot be mitigated to a degree that impacts are no longer significant. These have the potential to  
23 result in cumulative impacts to aesthetics when considered together with the proposed project. As  
24 such, the proposed project and other projects in the region would result in significant and  
25 unavoidable impacts related to aesthetics, more particularly operational lighting impacts, even after  
26 implementation of mitigation.

27 Cumulative impacts associated with decommissioning of the proposed project or an alternative  
28 would include the removal and disposal of facility equipment, as well as the removal of all below  
29 ground infrastructure to 5 feet below the ground surface. Restoration of the proposed project site  
30 would include returning the area as close as reasonably possible to preconstruction conditions  
31 suitable for current adjacent land. However, following removal of the facility, a strong color  
32 contrast associated with vegetation removal and disturbed soils would remain. In addition,  
33 revegetation in a desert region is difficult and generally enjoys limited success. Thus, visual  
34 recovery from land disturbance of closure and decommissioning would likely occur only over a  
35 long period of time and significant visual impacts would likely remain. However, Mitigation  
36 Measures MM 3.1-1b and MM 3.5-4a are recommended to achieve site restoration to the extent  
37 feasible. Because decommissioning and restoration would occur over a long period of time and  
38 would not eliminate proposed project's contribution to local and regional cumulative impacts on  
39 visual resources, adverse and cumulatively considerable effects would occur.

40 The proposed project's contribution to the visible industrialization of the desert landscape would  
41 constitute a significant visual impact when considered in the context of existing cumulative

1 conditions and reasonably foreseeable projects, both within the immediate project viewshed and in  
2 a somewhat broader context that encompasses the proposed project and surroundings as a whole.

3 The mitigation measures would assist in reducing impact to scenic resources created by the  
4 cumulative scenario. However, where the existing natural basin and range landscape still currently  
5 predominate, the industrial character of spatially extensive, highly prominent wind and solar  
6 projects would come to strongly dominate, substantially degrading the existing visual character and  
7 quality. The resulting cumulatively considerable visual impact would be significant and  
8 unavoidable.

### 9 3.1.5 Mitigation Measures

#### 10 3.1.5.1 Solar Facility Mitigation Measures

11 **MM 3.1-1a: Facility Lighting Standards.** The project shall continuously comply with the  
12 following:

13 Project facility lighting shall be designed to provide the minimum illumination needed to achieve  
14 safety and security objectives. Lighting shall be directed downward and shielded to focus  
15 illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs  
16 shall not extend below the shields.

17 **MM 3.1-2a: Nonreflective Materials.** Prior to the issuance of building permits, the project  
18 proponent shall demonstrate compliance with the following:

- 19 1. Any onsite buildings shall be constructed using nonreflective materials, as approved by Air  
20 Force and Kern County.
- 21 2. Submit plans showing onsite buildings are designed with a color treatment to be  
22 complementary to the surrounding desert landscape and use nonreflective materials, such  
23 as matte or nonglossy paint, as approved by Air Force and Kern County.

24 **MM 3.1-3a: Recycling and Trash Abatement.** Prior to issuance of a grading or building permit,  
25 a Maintenance, Recycling and Trash Abatement, and Pest Management Program shall be submitted  
26 to the Air Force and Kern County.

27 The program shall include, but not limited to the following:

- 28 1. The project proponent shall clear debris from the project area at least twice per year; this  
29 can be done in conjunction with regular panel washing and site maintenance activities.
- 30 2. Signs shall be clearly established with contact information for the project proponent's  
31 maintenance staff at regular intervals along the site boundary. Maintenance staff shall  
32 respond within three days to resident requests for additional cleanup of debris.  
33 Correspondence with such requests and responses shall be submitted to the Air Force, as  
34 necessary.
- 35 3. Daily construction trash removal with recycling program. Pest/rodent barriers for all  
36 receptacles shall be detailed. Locations of all recycling and trash receptacles during  
37 operation of the project shall be shown on final plans.

- 1 4. Weekly/Monthly/Annual ongoing trash removal and recycling program. Pest/rodent  
2 barriers for all receptacles shall be detailed.
- 3 5. During construction, operation, and decommissioning, debris and waste generated shall be  
4 recycled to the extent feasible.
  - 5 a. An on-site Recycling Coordinator shall be designated by the project proponent to  
6 facilitate recycling as part of the Maintenance, Recycling and Trash Abatement  
7 and Pest Management Program.
  - 8 b. The Recycling Coordinator shall facilitate recycling of all construction waste  
9 through coordination with contractors, local waste haulers, and/or other facilities  
10 that recycle construction/demolition wastes.
  - 11 c. The on-site Recycling Coordinator shall also be responsible for ensuring wastes  
12 requiring special disposal are handled according to State and County regulations  
13 that are in effect at the time of disposal.
  - 14 d. Contact information of the coordinator shall be provided to the Air Force and Kern  
15 County prior to issuance of building permits.

16 **MM 3.5-4a: Vegetation Salvage Plan.** This measure applies to general vegetation and to special-  
17 status plants (see section 3.5.5 for details).

### 18 **3.1.5.2 Gen-tie Mitigation Measures**

19 **MM 3.1-1b: Landscape Revegetation and Restoration Plan.** The following shall be  
20 implemented by the project proponent:

- 21 1. Prior to final onsite inspections, groupings of drought-tolerant plants (including relocation  
22 of Joshua trees as described in Mitigation Measures MM 3.5-14b), shall be planted along  
23 the generation tie line routes where transmission pole structures are constructed and where  
24 adjoining property is zoned for residential use. (E [Estate Residential], R-1 [Low-Density  
25 Residential], R-2 [Medium-Density Residential], R-3 [High-Density Residential], or PL  
26 (Platted Lands) zoning). Drought tolerant species shall consist of locally endemic plants  
27 that currently exist on the generation tie-line sites as described in the Biological Resources  
28 Technical Report for the Gen-Tie Routes for Edwards Air Force Base Solar EUL Project  
29 (Dudek, 2018) and shall extend approximately 25 feet on either side of the transmission  
30 pole structures. This requirement may be requested to be waived should the adjacent  
31 property be owned by the project proponent (to be verified by the Kern County Planning  
32 and Natural Resources Department) or a public or private agency submit correspondence  
33 to the Kern County Planning and Natural Resources Department requesting this  
34 requirement be waived.
- 35 2. Should the project proponent or agency sell the adjacent property prior to a final site  
36 inspection, drought-tolerant plants shall be planted prior to the sale. If such landscaping is  
37 required, it must be continuously maintained on the tie-line sites by the project proponent,  
38 in accordance with Section 19.86 (Landscaping Standards) of the Kern County Zoning  
39 Ordinance.
- 40 3. Prior to the commencement of operations, the project proponent must submit a Landscape  
41 Revegetation and Restoration Plan for the generation tie-line routes to the Kern County  
42 Planning and Natural Resources Department for approval. The plan shall include, but not  
43 limited to the following:

- 1 a. Where feasible, root balls shall be maintained during vegetation clearing to  
2 maintain soil stability and ultimately vegetation re-growth following construction.
- 3 b. Ground cover shall include native seed mix and shall be spread where earthmoving  
4 activities have taken place, as needed to establish revegetation.
- 5 c. In areas temporarily disturbed during generation tie-line installation (including  
6 grading or removal of root balls resulting in loose soil), the ground surface shall  
7 be revegetated with native seed mix or native plants and/or allowed to re-vegetate  
8 with existing native seed bank in the top soil where possible to establish  
9 revegetation. Areas that contain permanent features such as perimeter roads, and  
10 maintenance roads do not require revegetation.
- 11 d. The seed mix or native plants shall be determined through consultation with  
12 professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with  
13 local knowledge as shown on submitted resume and shall be approved by the Kern  
14 County Planning and Natural Resources Department prior to planting. Seed mix  
15 shall be hydro-seeded with pure live seed of habitat-appropriate, fast-germinating,  
16 weed-free native seed varieties, and shall be approved by the Kern County  
17 Planning and Natural Resources Department prior to planting. An appropriate  
18 hydraulic mulch and tackifier shall be used to protect and encapsulate the seed  
19 mixture to promote successful germination. Additional mulch or fertilizer shall not  
20 be applied.
- 21 e. All disturbed soil areas should be hydro-seeded per the determination of the  
22 SWPPP recommendations. Imprinting is recommended during hydro-seeding.
- 23 f. Phased seeding may be used if a phased construction approach is used (i.e. the  
24 entire site need not be seeded all at the same time).
- 25 g. The plan must include the approved native seed mix, a relative timeline for seeding  
26 the routes and a percentage of the routes to be covered, detail the consultation  
27 efforts completed and the methods that comply with wildlife agency regulations  
28 and prohibition of the use of toxic rodenticides.
- 29 h. The revegetation and restoration of the generation tie-line sites, shall be monitored  
30 annually for a three-year period, and an annual evaluation report shall be submitted  
31 to the Kern County Planning and Natural Resources Department during the three-  
32 year period. Ground cover shall be continuously maintained on the site by the  
33 project proponent. The three-year monitoring program is intended to ensure the  
34 site naturally achieve native plant diversity, establishes perennials, and is  
35 consistent with ground cover conditions prior to implementation of the project,  
36 where feasible.

37 **MM 3.1-2b: Recycling and Trash Abatement.** Prior to issuance of a grading or building permit,  
38 a Maintenance, Trash Abatement, and Pest Management Program for the gen-tie construction and  
39 decommissioning activities shall be submitted to the Kern County Planning and Natural Resources  
40 Department. The program shall include, but not be limited to the following:

- 41 1. The project proponent shall clear debris from the generation tie line area daily during the  
42 construction and decommissioning activities.
- 43 2. Signs shall be clearly established with contact information for the project proponent's  
44 maintenance staff. Maintenance staff shall respond within two days to requests for  
45 additional cleanup of debris at gen-tie installation sites. Correspondence with such requests

1 and responses shall be submitted to the Kern County Planning and Natural Resources  
2 Department.

3 3. Daily construction trash removal with recycling program during generation tie line  
4 installation. Pest/rodent barriers for all receptacles shall be detailed.

5 **MM 3.1-3b: Generation-tie Line Lighting Standards.** The project shall continuously comply  
6 with the following:

7 Generation tie line project lighting shall comply with the applicable provisions of the Dark Skies  
8 Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide  
9 the minimum illumination needed to achieve safety and security objectives. All lighting shall be  
10 directed downward and shielded to focus illumination on the desired areas only and avoid light  
11 trespass into adjacent areas. Lenses and bulbs shall not extend below the shields. A lighting plan  
12 shall be submitted and approved.

### 13 3.1.6 Residual Impacts after Mitigation

14 **Land scarring and vegetation clearance.** It is expected that even with effective implementation  
15 of Mitigation Measures MM 3.1-3a, 3.5-4a, for the solar facility portion of the project site and  
16 Mitigation Measure MM 3.1-2b for the gen-tie portion of the project site, the residual impacts  
17 associated with land scarring and vegetation clearance would remain for several years given the  
18 difficulty of successful revegetation in an arid environment. This would result in an unavoidable,  
19 long-term, adverse impact to visual resources.

20 **Night lighting.** The Proposed Action, in conjunction with both existing and reasonably foreseeable  
21 cumulative projects, is not expected to create a new source of substantial light that would adversely  
22 affect nighttime views in the area. Specifically, the lighting would be designed to provide the  
23 minimum illumination needed to achieve safety and security objectives. Lighting would be directed  
24 downward and shielded to focus illumination on the desired areas only and comply with Kern  
25 County’s “dark sky” ordinance. Lighting would be provided at the electrical enclosures, onsite  
26 buildings, and the main access road entrance. Lighting would be limited so that light spillover on  
27 the adjacent properties would be minimal. If lighting is needed for night maintenance, portable  
28 lighting would be used. Furthermore, the effective implementation of the lighting control steps  
29 contained in Mitigation Measure MM 3.1-1a for the solar facility portion of the project site, and  
30 Mitigation Measure MM 3.1-3b for the gen-tie portion of the project site, would ensure that night  
31 lighting impacts are reduced to the degree feasible; however, an unavoidable, long-term, adverse  
32 impact to visual resources would result with the cumulative scenario.



## 3.2 Agricultural and Forest Resources

### 3.2.1 Affected Environment

This section of the EIS/EIR describes the affected environment for agricultural and forest resources in the proposed project area, including the regulatory and environmental settings. It also describes the impacts on agricultural and forest resources that would result from implementation of the proposed project and includes mitigation measures that would reduce these impacts, where applicable.

There are no lands in the vicinity of the solar facility site and gen-tie options that are zoned as forest land, timberland, or for timberland production. Therefore, forest resources are not present within the proposed solar facility site or along the proposed gen-tie line and would not be affected by the project or alternatives. No impacts to forest resources would occur.

#### 3.2.1.1 Scoping Issues Addressed

The following scoping comment related to Agricultural and Forest Resources was provided by an individual, and the issue raised in the comment is addressed in this section:

- Impacts to privately-owned and -operated farms within the footprint of the proposed generation tie lines should be considered in the Draft EIS/EIR.

#### 3.2.1.2 Regulatory Framework

##### ***Federal***

The Farmland Protection Policy Act (FPPA) was established to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It directs federal programs to be compatible with state and local policies for the protection of farmlands. The FPPA is found within 7 U.S. Code Section 4201.

##### ***State***

The California Department of Conservation (DOC) applies the soil classifications created by the Natural Resources Conservation Service (NRCS) to identify and plan for California's agricultural land resources. The following categories are considered Farmland: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Other categories mapped by the DOC include: Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land.

- **Prime Farmland.** Land 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 in the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Land that is similar to Prime Farmland but has minor shortcomings, such as steeper slopes or lower moisture content. The land must have been used for irrigated agricultural production at some time in the 4 years prior to the mapping date.

- 1 • **Unique Farmland.** Land with lesser quality soils used for the production of the State’s  
2 leading agricultural crops. This land is usually irrigated but may include land that supports  
3 non-irrigated orchards or vineyards, as found in some climatic zones in California. The  
4 land must have been used for crop production at some time in the 4 years prior to the  
5 mapping date.
- 6 • **Farmland of Local Importance.** Land that is important to the local agricultural economy,  
7 as determined by each county’s Board of Supervisors and a local advisory committee.
- 8 • **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock.  
9 This category was developed in cooperation with the California Cattlemen’s Association,  
10 University of California Cooperative Extension, and other groups with an interest in  
11 grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- 12 • **Urban and Built-up Land.** Land that is developed with structures that have been built to  
13 a density of at least one unit per 1.5 acres, or approximately six structures per 10-acre  
14 parcel. This land supports residential, industrial, commercial, institutional, and public  
15 administrative uses; railroad and other transportation yards; cemeteries; airports; golf  
16 courses; sanitary landfills; sewage treatment facilities; water control structures; and other  
17 developed uses.
- 18 • **Other Land.** Land not included in any other mapping category. Common examples  
19 include low-density rural developments; brush, timber, wetland, and riparian areas not  
20 suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip  
21 mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural  
22 lands that are surrounded on all sides by urban development and greater than 40 acres are  
23 mapped as Other Land.

24 California Land Conservation Act (Williamson Act)

25 The California Land Conservation Act of 1965, commonly referred to as the Williamson Act,  
26 enables local governments to enter into contracts with private land owners to restrict specific  
27 parcels of land to agricultural or related open space uses in return for reduced property tax  
28 assessments. Private land within locally designated agricultural preserve areas is eligible for  
29 enrollment under a Williamson Act Contract. The Williamson Act program is administered by the  
30 DOC in conjunction with local governments that administer the individual contract arrangements  
31 with landowners. Participation in the Williamson act program is dependent on County adoption  
32 and implementation of the program and is voluntary for landowners (DOC, 2013).

33 Under the Williamson Act, the landowner commits the parcel to a 10-year period wherein no-  
34 conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the  
35 actual use of the land for agricultural purposes, as oppose to its unrestricted market value. Each  
36 year the contract automatically renews unless a notice of nonrenewal or cancellation is filed.  
37 Nonrenewal or contract cancellation does not change a property’s zoning. California Government  
38 Code Section 51238 states that, unless otherwise decided by a local board or council, the erection,  
39 construction, alteration, or maintenance of electric and communication facilities, as well as other  
40 facilities, are determined to be compatible uses within any agricultural preserve. Section 51238  
41 states that the board of supervisors may impose conditions on lands or land uses to be placed within  
42 preserves to permit and encourage compatible uses, which conforms to Section 51238.1.  
43 Furthermore, under California Government Code Section 51238.1, a board or council may allow

1 any use that, without conditions or mitigations, would otherwise be considered incompatible.  
2 However, this may occur only if the use meets the following conditions:

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

#### 14 Farmland Security Zone Act

15 The Farmland Security Zone Act was established by the California State Legislature in 1999 to  
16 ensure that long-term farmland preservation is part of public policy in the state, similar to the  
17 Williamson Act. Under the provisions of this act, the landowner already under a Williamson Act  
18 Contract can apply for Farmland Security Zone status by entering into a contract with the county.  
19 Farmland Security Zone classification automatically renews each year for an additional 20 years,  
20 in return for a further 35 percent reduction in the taxable value of land and growing improvements,  
21 in addition to Williamson Act tax benefits, the owner of the property promises not to develop the  
22 property into nonagricultural uses.

#### 23 Public Resources Code Section 21060.1

24 Public Resources Code (PRC) Section 21060.1 uses the Farmland Mapping and Monitoring  
25 Program (FMMP) to define agricultural land for the purposes of assessing environmental impacts.  
26 . The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural  
27 lands and the conversion of these lands. The FMMP provides guidance for the analysis of  
28 agricultural and land use changes throughout California.

29 PRC Section 21060.1 uses the FMMP to define agricultural land to assess environmental impacts.  
30 The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural  
31 lands and to analyze the conversion of such lands. The FMMP provides analysis pertaining to  
32 agricultural land use changes throughout California.

#### 33 **Local**

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

- 1       • **8.1 Intensive Agriculture (minimum parcel size 20 acres gross)** — lands devoted to the  
2       production of irrigated crops or having potential for such use.
- 3       • **8.2 Resource Reserve (minimum parcel size is 20 acres gross, except to a Williamson**  
4       **Act Contract/Farmland Security Zone Contract, in which case the minimum parcel**  
5       **size shall be 80 acres gross)** — lands devoted to areas of mixed natural resource  
6       characteristics including rangeland, woodland, and wildlife habitat which occur in an  
7       established County water district.
- 8       • **8.3 Extensive Agriculture (minimum parcel size 20 acres gross, except lands subject**  
9       **to a Williamson Act contract/Farmland Security Zone contract, in which case the**  
10       **minimum parcel size shall be 80 acres gross)** — lands devoted to uses involving large  
11       amounts of land with relatively low value-per-acre yields, such as livestock grazing,  
12       dryland farming, and woodlands.

13       Additionally, the designation of 8.5 (Resource Management) can be used for agricultural uses such  
14       as dry land farming and ranch facilities. The policies, goals and implementation measures in the  
15       Kern County General Plan for agricultural resources applicable to the project are provided below.  
16       The Kern County General Plan contains additional policies, goals, and implementation measures  
17       that are more general in nature and not specific to development such as the project, therefore, they  
18       are not listed below, however, all policies, goals and implementation measures in the Kern County  
19       General Plan are incorporated herein by reference.

20       The Kern County General Plan Land Use, Open Space, and Conservation Element establishes  
21       goals, policies and implementation measures for protecting areas of important mineral, petroleum,  
22       and agricultural lands, and ensures new development minimizes impacts on neighboring resource  
23       lands. The Land Use, Open Space, and Conservation Element also strives to conserve prime  
24       agricultural land from premature conversion.

## 25       **Kern County General Plan Chapter 1. Land Use, Open Space, and Conservation** 26       **Element**

### 27       1.9 Resource

#### 28       Goals

- 29       Goal 1:     To contain new development within an area large enough to meet generous projections  
30       of foreseeable need, but in locations which will not impair the economic strength  
31       derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish  
32       the other amenities which exist in the County.
- 33       Goal 2:     Protect areas of important mineral, petroleum, and agricultural resource potential for  
34       future use.
- 35       Goal 3:     Ensure the development of resource areas minimize effects on neighboring resource  
36       lands.
- 37       Goal 5:     Conserve prime agriculture lands from premature conversion.
- 38       Goal 6:     Encourage alternative sources of energy, such as solar and wind energy, while  
39       protecting the environment.

1 Policies

2 Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent  
3 interim uses in undeveloped portions of the County regardless of general plan  
4 designation.

5 Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced  
6 agricultural soils with surface delivery water systems, should be protected from  
7 incompatible residential, commercial, and industrial subdivision and development  
8 activities.

9 Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly  
10 Soil Conservation Service) as having high range-site value should be conserved for  
11 Extensive Agriculture uses or as Resource Reserve, if located within a County water  
12 district.

13 Implementation Measure

14 Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland  
15 2000 map produced by the Department of Conservation, which have Class I or II soils  
16 and a surface delivery water system shall be conserved through the use of agricultural  
17 zoning with minimum parcel size provisions.

18 There are no goals, policies, or implementation measures within the Mojave Specific Plan that  
19 apply to Agricultural Resources.

20 The South of Mojave/Elephant Butte Specific Plan states that new development on agricultural land  
21 must be in compliance with the existing Zoning Ordinance.

22 There are no goals, policies, or implementation measures within West Edwards Road Settlement  
23 Plan that apply to Agricultural Resources.

24 There are no goals, policies, or implementation measures within the Actis Interim Rural  
25 Community Plan that apply to Agricultural Resources.

26 **Kern County Zoning Ordinance**

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

34 The Kern County Zoning Ordinance establishes Exclusive Agriculture and Limited Agriculture  
35 Zones which list the permitted uses with each zone. Both the Exclusive and Limited Agriculture  
36 zones allow transmission lines and supporting towers, poles, and underground facilities for gas,  
37 water, electricity, etc., as well as utility substations on site.

**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 this analysis, the conversion of agricultural land to a solar facility is incompatible with the farming provisions necessary for projects under Williamson Act contracts. Therefore, a proposed solar project on contracted land is required by the County to petition for an early cancellation of the contract. However, the project site does not contain lands under a Williamson Act contract.

**3.2.1.3 Environmental Setting**

This section of the EIS/EIR describes the existing physical environmental conditions in the vicinity of the project as they relate to the potential impacts to agricultural resources from the Proposed Action.

**Regional Setting**

Agriculture is a major industry in Kern County. Kern County covers 8,202 square miles, including 1,384 square miles of harvested agricultural land. According to the 2017 Kern County Agricultural Crop Report, agriculture in Kern County was worth \$7.3 billion in 2017. The top five commodities for 2017 were grapes, almonds, citrus, milk, and pistachios, which made up more than \$4.5 billion (63%) of the total value.

Kern County is growing rapidly and ranks high on the list of California counties with issues related to urbanization and the loss of farmland. The Department of Conservation (DOC) found that 3,288 acres of land, including all of the categories of important farmland, grazing land, and other land, were converted to nonagricultural use between 2008 and 2010 (DOC, 2014). Additionally, as shown in **Table 3.2-1**, between 2014 and 2016, Kern County lost approximately 4,605 acres of important farmland and converted 1,652 acres to grazing land, which brings the total agricultural land converted to 2,953 acres.

**TABLE 3.2-1  
2014–2016 FARMLAND CONVERSION IN KERN COUNTY**

<b>Land Use Category</b>	<b>Total Acres 2014</b>	<b>Total Acres 2016</b>	<b>Net Acreage Changed</b>
Prime Farmland	585,035	579,295	-5,740
Farmland of Statewide Importance	209,564	209,484	-80
Unique Farmland	90,108	91,323	1,215
Farmland of Local Importance	0	0	0
<b>Important Farmland Subtotal</b>	<b>884,707</b>	<b>880,102</b>	<b>-4,605</b>
Grazing Land	1,847,614	1,849,266	1,652
<b>Agricultural Land Subtotal</b>	<b>2,732,321</b>	<b>2,729,368</b>	<b>-2,953</b>

Land Use Category	Total Acres 2014	Total Acres 2016	Net Acreage Changed
Urban and Built-up Land	151,596	159,179	7,583
Other Land	2,330,523	2,325,914	-4,609
Water Area	9,874	9,853	-21
<b>Total Area Inventoried</b>	<b>5,224,314</b>	<b>5,224,314</b>	<b>0</b>

SOURCE: DOC, 2016a.

1  
 2 According to the Kern Economic Development Corporation, it is estimated that the total population  
 3 of Kern County will reach 954,191 individuals in 2020, growing from today’s population of about  
 4 886,507 (KEDC, 2016). The anticipated growth in population will most likely reduce the amount  
 5 of agricultural land available in the county even further. However, it is important to note the  
 6 conversion of agricultural land is affected by a number of factors in addition to population growth  
 7 and urban development. Actual production is dependent on commodity prices, water prices and  
 8 supply, labor, the proximity of processing and distribution facilities, and pest management. Factors  
 9 such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops  
 10 are grown and which lands go in and out of production. In addition, a significant amount of the  
 11 important farmland in the county has been converted to grazing land over the past several years,  
 12 which contributes to the overall loss of agricultural land in the county.

13 **Local Setting**

14 Edwards AFB encompasses approximately 481 square miles. Agricultural activities do not  
 15 currently exist on the base, nor is the development of agricultural land uses among the priorities  
 16 identified in the Edwards AFB Installation Development Plan.

17 There are currently no active agricultural land uses within or surrounding the proposed solar facility  
 18 and gen-tie route options. Several areas along the proposed gen-tie line options appear to have had  
 19 active agriculture in the past. However, these areas are currently fallow. The nearest active farmland  
 20 is located approximately 3 miles west of the proposed solar facility and consists primarily of  
 21 irrigated cropland (see **Figure 3.2-1**). The site of the proposed solar facility is wholly located within  
 22 Edwards AFB. Kern County has zoned all land within Edwards AFB as Limited Agriculture (A-  
 23 1). The majority of the proposed gen-tie line Option 1 would be constructed on land zoned by Kern  
 24 County as Limited Agriculture (A-1) or Exclusive Agriculture (A). The proposed gen-tie line  
 25 Option 2 would be constructed on land zoned by Kern County as Limited Agriculture (A-1),  
 26 Exclusive Agriculture (A), Heavy Industrial (M-3), Medium Industrial (M-2), and Estate (E).  
 27 Proposed Options A and B, for the east-west gen-tie lines, would primarily be constructed on land  
 28 zoned by Kern County as Limited Agriculture (A-1) and Exclusive Agriculture (A).

29

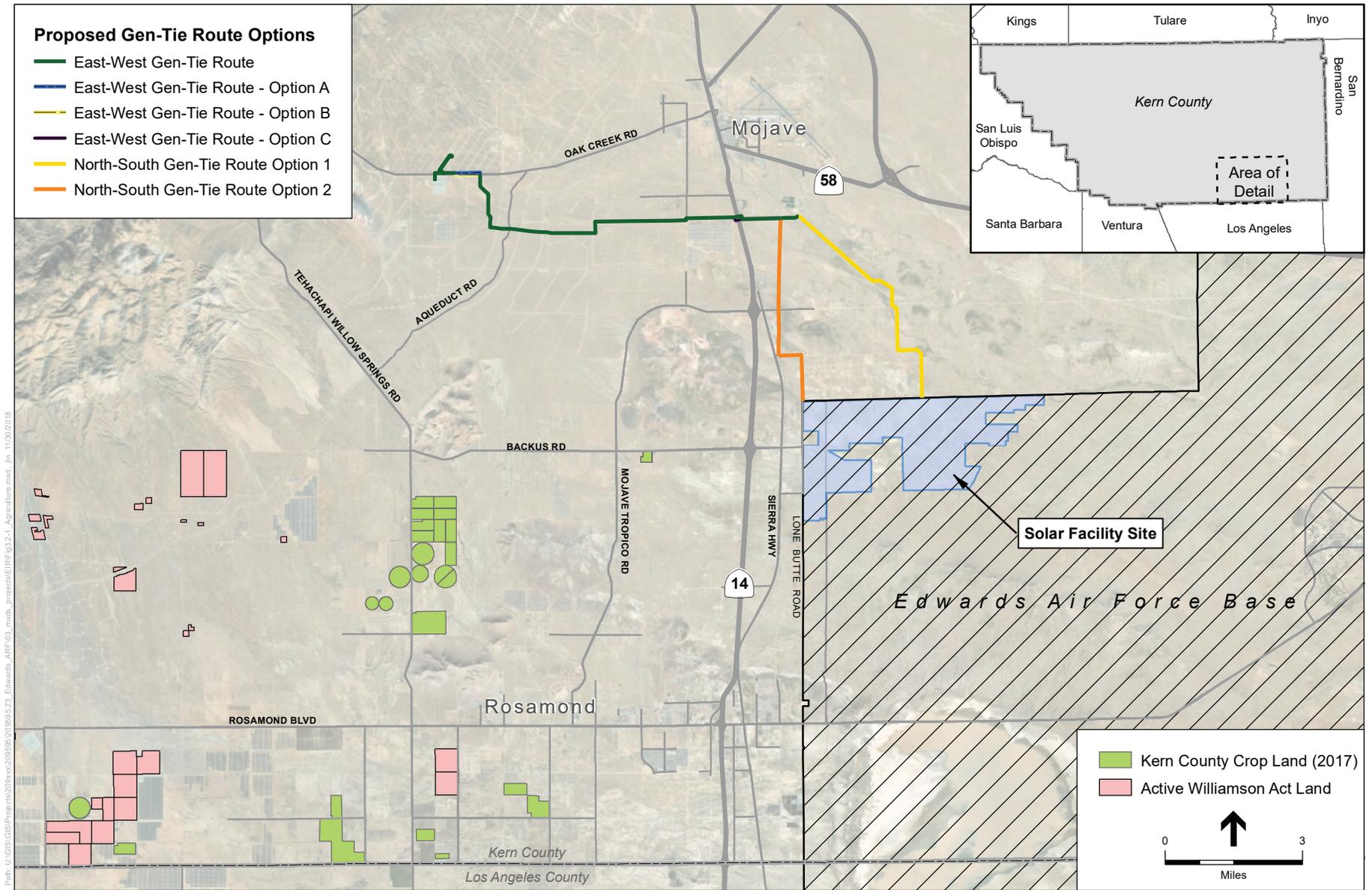


Figure 3.2-1: EXISTING ACTIVE AGRICULTURE

1 The land occupied by and surrounding the project is primarily identified as “Nonagricultural and  
2 Natural Vegetation” land by the California DOC FMMP and Rural Land Mapping Project.  
3 However, the proposed gen-tie route options would be constructed within areas identified as “Semi-  
4 Agricultural and Rural Commercial Land.” None of the land in the vicinity of the project site is  
5 identified as an agricultural preserve or under a Williamson Act contract. The nearest active  
6 Williamson Act lands are located approximately 10 miles southwest of the solar facility (see Figure  
7 3.2-1).

## 8 **3.2.2 Environmental Consequences**

9 This section of the EIS/EIR describes the environmental consequences relating to agricultural and  
10 forest resources for the proposed project. It describes the methods used to determine the impacts of  
11 the proposed project and lists the thresholds used to conclude whether an effect would be  
12 significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate  
13 for) significant impacts accompany each impact discussion.

### 14 **3.2.2.1 Assessment Methods/Methodology**

15 Potential impacts to agriculture and forest resources associated with implementation of the project  
16 were assessed based on Kern County General Plan’s applicable goals and policies related to  
17 agricultural resources, and the significance criteria established for this analysis.

18 Important Farmland data from DOC was used to determine the most recent classification of  
19 farmland on the project sites (DOC, 2016b). Williamson Act data was obtained from the Kern  
20 County Assessor’s Office. Federal, State, and local regulations were also reviewed for relevant  
21 goals and policies that may be applicable to the Proposed Action. The impact analysis addresses  
22 potential conversion of important farmlands, conflict with agricultural zoning classifications, or  
23 other changes resulting from the Proposed Action that would remove important farmlands from  
24 agricultural production.

### 25 **3.2.2.2 Determination of Impacts/Thresholds of Significance**

26 For this analysis, an environmental impact was significant related to agricultural resources if it  
27 would result in any of the effects listed below. These effects are based on common NEPA standards,  
28 CEQA Guidelines Appendix G (14 CCR 15064.7(a)), and standards of professional practice. A  
29 project would have a significant impact on agriculture and forest resources if it would:

- 30 • Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance  
31 (Farmland), as shown on the maps pursuant to the FMMP of the California Resources  
32 Agency, to nonagricultural uses.
- 33 • Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- 34 • Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC  
35 Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned  
36 Timberland Production (as defined by Government Code Section 51104(g)).
- 37 • Result in the loss of forest land or conversion of forest land to non-forest use.

- 1       • Involve other changes in the existing environment which, due to their location or nature,  
2       could result in conversion of Farmland, to non-agricultural use or conversion of forest land  
3       to non-forest use.
- 4       • Result in the cancellation of an open space contract made pursuant to the California Land  
5       Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or  
6       more acres (PRC Section 15205(b)(3)).

7       The County determined in the NOP/NOI (see Appendix A) that the following environmental issue  
8       area would result in no impacts or less-than-significant impacts and were therefore scoped out of  
9       requiring further review in this EIS/EIR. Please refer to Appendix A of this EIS/EIR for a copy of  
10      the NOP/NOI and additional information regarding these issue areas.

- 11      • Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Important  
12      (Farmland), as shown on the maps pursuant to the FMMP of the California Resources  
13      Agency, to nonagricultural uses.
- 14      • Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC  
15      Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned  
16      Timberland Production (as defined by Government Code Section 51104(g)).
- 17      • Result in the loss of forest land or conversion of forest land to non-forest use
- 18      • Result in the cancellation of an open space contract made pursuant to the California Land  
19      Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or  
20      more acres (PRC Section 15205(b)(3)).

### 21      3.2.3      Analysis of Environmental Effects

#### 22      3.2.3.1      Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### 23      ***NEPA: Environmental Impacts***

##### 24      **Construction**

25      The proposed solar facility is located on land zoned by Kern County as Limited Agriculture (A-1).  
26      Section 19.14.030 of the Kern County Zoning Ordinance states that electrical power generating  
27      plants are permitted with a Conditional Use Permit. However, the land is owned by the federal  
28      government and a Conditional Use Permit is not required for the solar facility on federal land.

29      The majority of the proposed gen-tie route options would be constructed on lands zoned by Kern  
30      County as either Limited Agriculture (A-1) or Exclusive Agriculture (A) and Heavy Industrial (M-  
31      3) or Medium Industrial (M-2). Sections 19.14.020 (d), 19.12.020, 19.38.020 (g) and 19.40.020 (g)  
32      of the Kern County Zoning Ordinance state that transmission lines and supporting towers, poles,  
33      and underground facilities for gas, water, electricity, telephone, or telegraph service owned and  
34      operated by a public utility company or other company under the jurisdiction of the California  
35      Public Utilities Commission are permitted within the Limited Agriculture (A-1) and Exclusive  
36      Agriculture (A), Heavy Industrial (M-3), or Medium Industrial (M-2) zones. Therefore,  
37      construction of the Proposed Action would not conflict with existing zoning for agricultural use.

38      The proposed gen-tie line options would be constructed within the center of an up to 120-foot  
39      easement, which would result in permanent nonagricultural use of lands zoned as Limited

1 Agriculture (A-1) and Exclusive Agriculture (A), Heavy Industrial (M-3), or Medium Industrial  
2 (M-2). The proposed gen-tie line option would require the approval of a Franchise Agreement  
3 through the Kern County Board of Supervisors. The proposed gen-tie route options would also  
4 result in permanent nonagricultural use of land identified as “Semi-Agricultural and Rural  
5 Commercial Land” by the FMMP and Rural Land Mapping Project. However, the project would  
6 not be constructed on land currently used for agricultural purposes, nor would it involve other  
7 changes in the existing environment which, due to their location or nature, could result in  
8 conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.  
9 [JMI]Therefore, the Proposed Action would not significantly affect farmland or other agricultural  
10 resources during the construction phase.

### 11 **Operation and Maintenance**

12 Operations and maintenance activities such as periodic maintenance and panel washing would not  
13 involve other changes in the existing environment which, due to their location or nature, could  
14 result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest  
15 use.. Therefore, the Proposed Action would not significantly affect farmland, forest land, or other  
16 agricultural resources during the operation and maintenance phase.

### 17 **Decommissioning**

18 Decommissioning of the Proposed Action would not conflict with existing zoning for agricultural  
19 use or involve other changes in the existing environment which, due to their location or nature,  
20 could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-  
21 forest use. Therefore, decommissioning would not significantly affect farmland, forest land, or  
22 other agricultural resources.

### 23 **CEQA: Impact Significance Determination**

#### 24 **Impact 3.2-1: Would the project conflict with existing zoning for agricultural use or a** 25 **Williamson Act Contract.**

26 As shown on Figure 3.2-1, no parcels within or immediately adjacent to the project site are subject  
27 to Williamson Act contracts; therefore, implementation of the proposed project would not impact  
28 Williamson Act lands. As discussed, the Proposed Action would have no impact on existing zoning  
29 for agricultural use.

### 30 **Mitigation Measures**

31 No mitigation measures are required.

### 32 **Level of Significance**

33 No Impacts.

#### 34 **Impact 3.2-2: Would the project involve other changes in the existing environment which,** 35 **due to their location or nature, could result in conversion of Farmland to nonagricultural use** 36 **or conversion of forest land to non-forest use.**

37 Alternative A would not involve other changes in the existing environment which, due to their  
38 location or nature, could result in conversion of Farmland to nonagricultural use or conversion of

1 forest land to non-forest use. Operation of the Proposed Action would not affect any adjacent  
2 Farmland or agricultural uses because the project would be self-contained and the gen-tie line  
3 options would not be expected to affect the ability of adjacent landowners to continue cultivating  
4 their land. Implementation of the proposed project would not result in conversion of Farmland to  
5 nonagricultural use or conversion of forest land to non-forest use, impacts related to conversion of  
6 Farmland or forestland to nonagricultural or non-forest uses would be less than significant and no  
7 mitigation is required.

#### 8 **Mitigation Measures**

9 No mitigation measures are required.

#### 10 **Level of Significance**

11 Impacts would be less than significant.

### 12 **3.2.3.2 Alternative B: 1,500-Acre EUL**

#### 13 ***NEPA: Environmental Impacts***

##### 14 **Construction**

15 Like Alternative A, all other components of the Alternative B solar facility would be constructed  
16 within Edwards AFB on land zoned by Kern County as Limited Agriculture (A-1). Edwards AFB  
17 is exempt from the provisions of the zoning code due to its ownership by the federal government.  
18 Under Alternative B, the actual solar facility is downsized to less than half of the original project  
19 and the portion of the gen-tie route options located outside of Edwards AFB would be identical to  
20 that proposed for Alternative A. Construction activities proposed for the Alternative B gen-tie route  
21 options would also be the same as proposed under Alternative A to a lesser extent. Therefore,  
22 impacts to agricultural resources along the gen-tie line would be identical to those identified for  
23 Alternative A. Alternative B would not involve other changes in the existing environment which,  
24 due to their location or nature, could result in conversion of Farmland to nonagricultural use or  
25 conversion of forest land to non-forest use. Therefore, Alternative B would not significantly affect  
26 farmland, forest land, or other agricultural resources during the construction phase (see Impact 3.2-  
27 2).

##### 28 **Operation and Maintenance**

29 Similar to Alternative A, operations and maintenance activities such as periodic maintenance and  
30 panel washing would not involve other changes in the existing environment which, due to their  
31 location or nature, could result in conversion of Farmland to nonagricultural use or conversion of  
32 forest land to non-forest use.. Therefore, Alternative B would not significantly affect farmland,  
33 forest land, or other agricultural resources during the operation and maintenance phase.

##### 34 **Decommissioning**

35 Alternative B would not involve other changes in the existing environment which, due to their  
36 location or nature, could result in conversion of Farmland to nonagricultural use or conversion of  
37 forest land to non-forest use. Decommissioning would not significantly affect farmland, forest land,  
38 or other agricultural resources during the operation and maintenance phase.

1 **CEQA: Impact Significance Determination**

2 No parcels within or immediately adjacent to Alternative B are subject to Williamson Act contracts;  
3 therefore, there would be no impact to Williamson Act lands. Alternative B would not conflict with  
4 existing zoning for agricultural use. Therefore, there would be no impacts related to conflicts with  
5 existing zoning for agricultural use or Williamson Act contracts (see Impact 3.2-1 above).

6 Alternative B would not be located on land currently used for agricultural purposes, nor would it  
7 involve other changes in the existing environment which, due to their location or nature, could  
8 result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest  
9 use. As discussed for Alternative A, operation of Alternative B would not affect any adjacent  
10 Farmland or agricultural uses because the project would be self-contained and the gen-tie line  
11 options would not be expected to affect the ability of adjacent landowners to continue cultivating  
12 their land. Impacts related to conversion of Farmland or forestland to nonagricultural or non-forest  
13 uses would be less than significant and no mitigation is warranted (see Impact 3.2-2 above).

14 **3.2.3.3 Alternative C: No Action/No Project**

15 **NEPA: Environmental Impacts**

16 Under this alternative, none of the components proposed under Alternative A would be built.  
17 Alternative C would not conflict with existing zoning for agricultural use or be located on land  
18 currently used for agricultural purposes, nor would it involve other changes in the existing  
19 environment which, due to their location or nature, could result in conversion of Farmland to  
20 nonagricultural use or conversion of forest land to non-forest use. Therefore, Alternative C would  
21 not affect farmland, forest land, or other agricultural resources during construction, operation and  
22 maintenance, and decommissioning phases.

23 **CEQA: Impact Significance Determination**

24 No parcels within or immediately adjacent to Alternative C are subject to Williamson Act contracts;  
25 therefore, there would be no impact to Williamson Act lands. Alternative C would not conflict with  
26 existing zoning for agricultural use. Therefore, there would be no impacts related to conflicts with  
27 existing zoning for agricultural use or Williamson Act contracts (see Impact 3.2-1 above).

28 Alternative C would not conflict with existing zoning for agricultural purposes, nor would it involve  
29 other changes in the existing environment which, due to their location or nature, could result in  
30 conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.  
31 Therefore, Alternative C would not affect farmland, forest land or other agricultural resources, as  
32 no project would be forthcoming (see Impact 3.5-2).

33 **Mitigation Measures**

34 No mitigation measures are required.

35 **Level of Significance**

36 No Impacts.

1 **3.2.4 Cumulative Impact Analysis**

2 **3.2.4.1 NEPA: Cumulative Environmental Effects and Their**  
3 **Significance**

4 The scope for cumulative effects relating to agriculture encompasses all past, present and  
5 reasonably foreseeable projects that have impacted or could potentially impact farmland in Kern  
6 County, California. As shown, between 2014 and 2016, a total of 2,953 acres of agricultural lands  
7 were converted to nonagricultural uses in Kern County. Several of the reasonably foreseeable  
8 projects presented in Table 3-1 would have the potential to convert farmland to nonagricultural  
9 uses; however, the Proposed Action would not involve other changes in the existing environment  
10 which, due to their location or nature, could result in conversion of Farmland to nonagricultural use  
11 or conversion of forest land to non-forest use Therefore, the Proposed Action would not have the  
12 potential to combine with impacts related to agricultural resources to result in a cumulative impact.

13 **3.2.4.2 CEQA: Cumulative Impact Thresholds of Significance**  
14 **Determination**

15 No parcels within or immediately adjacent to the project site are subject to Williamson Act  
16 contracts. Therefore, the proposed project would not incrementally contribute to the conversion of  
17 Williamson Act lands to nonagricultural uses. The proposed project would not conflict with  
18 existing zoning for agricultural use. Therefore, the proposed project would not incrementally  
19 contribute to the rezoning of lands currently zoned for agricultural use. The project would result in  
20 no impacts on existing zoning for agricultural use or Williamson Act contracts under the cumulative  
21 scenario. The proposed project would not be located on land currently used for agricultural  
22 purposes and would not involve other changes in the existing environment which, due to their  
23 location or nature, could result in conversion of Farmland to nonagricultural use or conversion of  
24 forest land to non-forest use. Therefore, impacts of the proposed project would not have the  
25 potential to combine with impacts of other projects to result in cumulative impacts related to the  
26 conversion of Williamson Act contracts or other farmland to nonagricultural uses or forest land to  
27 non-forest use.

28 **Mitigation Measures**

29 No mitigation measures are required.

30 **Level of Significance**

31 Cumulative impacts would be less than significant.

32 **3.2.5 Mitigation Measures**

33 No mitigation measures would be required.

34 **3.2.6 Residual Impacts after Mitigation**

35 All impacts related to Williamson Act contracts and other agricultural and forest resources would  
36 have no impact or be less than significant without mitigation; therefore, there would be no potential  
37 for residual significant impacts to occur.

## 3.3 Air Quality

### 3.3.1 Affected Environment

This section of the EIS/EIR describes the affected environment for air quality in the proposed project area, including the regulatory and environmental settings and short- and long-term air quality impacts associated with implementation of the project.

The technical information provided in this section is based in part on the Edwards Air Force Base Solar Facility Air Quality and Greenhouse Gas Emissions Methodology and Emissions Calculations Memorandum (Appendix B2) and the Construction and Operational Health Risk Assessment for the Edwards Air Force Base Solar Facility Project prepared by Dudek in February 2018 (Appendix B3).

#### 3.3.1.1 Scoping Issues Addressed

The following scoping comments related to air quality were provided by agencies and individuals, and these issues and concerns are addressed in this section:

- Fugitive dust mitigation measures should be implemented.
- The effects of dust generation on State Route (SR) 14 and local residents should be considered.
- Air quality impacts from grading of desert lands should be examined in the Draft EIS/EIR.
- A Fugitive Dust Emission Control Plan and a Fugitive Dust Emission Monitoring Plan must be included as required by the Eastern Kern Air Pollution Control District (EKAPCD).
- An application for an “Authority to Construct” must be submitted prior to commencing any ground clearing or earthmoving associated with the solar facility construction.
- Stationary equipment that emits air pollutants (generator sets, concrete batch plants, etc.) may require a permit from the EKAPCD.
- Ambient air conditions and potential air quality impacts of the project, including construction and operation emission estimates, should be included in the EIS/EIR, specifying that mitigation measures should work to reduce ozone precursors.
- The project site is located in an area that the Centers for Disease Control has determined is endemic for *Coccidioides immitis*, a fungus causing Valley Fever in humans. Ground-disturbing activities may result in dispersal of *Coccidioides* spores and a discussion of the potential health and safety impacts resulting from dispersal should be included in the Draft EIS/EIR.

#### 3.3.1.2 Regulatory Framework

In California, air quality is regulated by several agencies, including U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (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

1 located within the Mojave Desert Air Basin (MDAB), which is under the jurisdiction of the  
2 EKAPCD.

3 ***Federal***

4 **USEPA**

5 The principal air quality regulatory mechanism on the federal level is the Clean Air Act (CAA) and  
6 in particular, the 1990 amendments to the CAA and the National Ambient Air Quality Standards  
7 (NAAQS) that it establishes. These standards identify levels of air quality for “criteria” pollutants  
8 that are considered the maximum levels of ambient (background) air pollutants considered safe,  
9 with an adequate margin of safety, to protect the public health and welfare. USEPA’s primary role  
10 at the state level is to oversee the state air quality programs. USEPA sets federal vehicle and  
11 stationary source emission standards and oversees approval of all State Implementation Plans (SIP),  
12 as well as providing research and guidance in air pollution programs. The SIP is a state level  
13 document that identifies all air pollution control programs within California that are designed to  
14 meet and maintain the NAAQS.

15 Attainment defines the status of a given airshed with regard to NAAQS requirements. Air basins  
16 not meeting these standards are classified as “nonattainment.” The USEPA has designated the  
17 project area as being in attainment or unclassified with respect to all NAAQS except ozone. The  
18 USEPA has designated the portion of the MDAB where the project is located within Kern County  
19 as a moderate nonattainment area for the 2008 federal 8-hour ozone standard (EKAPCD, 2017).  
20 The EKAPCD was required to submit a SIP revision for the nonattainment area to show how they  
21 would comply with statutory and regulatory conditions to meet attainment. However, modelling  
22 indicated that the EKAPCD could not meet the 0.075 ppm standard by the moderate deadline, but  
23 could attain it by the 2020 “serious” nonattainment deadline (EKAPCD, 2017). Therefore, pursuant  
24 to Section 181(b)(3) of the CAA “Voluntary Reclassification”, the EKAPCD requested CARB  
25 formally submit a request to USEPA asking for voluntary reclassification from “moderate” to  
26 “serious” nonattainment for the 2008, 8-hour Ozone NAAQS, and revise the attainment date to  
27 December 31, 2020 (EKAPCD, 2017). The EKAPCD expects the USEPA to approve their request  
28 to be reclassified as “serious” nonattainment (EKAPCD, 2017). The USEPA has designated East  
29 Kern County as “serious” nonattainment for the 1987 24-hour PM<sub>10</sub> NAAQS for the central-east  
30 portion of the County, as attainment (maintenance) for the Indian Wells Valley planning area, and  
31 as unclassifiable/attainment for the southeastern portion of East Kern County where the project site  
32 is located (USEPA, 2015).

33 Section 176(c) of the CAA requires federal agencies to ensure that actions undertaken in  
34 nonattainment or maintenance areas are consistent with the CAA and with federally enforceable  
35 air quality management plans. USEPA has promulgated separate rules that establish conformity  
36 analysis procedures for highway/mass-transit projects (40 CFR Part 93, Subpart A) and for other  
37 (general) federal agency actions (40 CFR Part 93, Subpart B). General conformity requirements  
38 are potentially applicable to many federal agency actions, but apply only to those aspects of an  
39 action that involve ongoing federal agency responsibility and control over direct or indirect sources  
40 of air pollutant emissions. The USEPA conformity rule establishes a process that is intended to  
41 demonstrate that the proposed federal action:

- 1 • Would not cause or contribute to new violations of federal air quality standards.
- 2 • Would not increase the frequency or severity of existing violations of federal air quality
- 3 standards.
- 4 • Would not delay the timely attainment of federal air quality standards.

5 The USEPA general conformity rule applies to federal actions occurring in nonattainment or  
6 maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their  
7 precursors) exceed specified thresholds. The emission thresholds that trigger requirements of the  
8 conformity rule are called *de minimis* levels. Emissions associated with stationary sources that are  
9 subject to permit programs incorporated into the SIP (e.g., Title V new source review [NSR] or  
10 prevention of serious deterioration [PSD] permits) are not counted against the *de minimis* threshold  
11 level.<sup>1</sup>

12 Compliance with the conformity rule can be demonstrated in several ways. Compliance is  
13 presumed if the net increase in direct and indirect emissions from a federal action would be less  
14 than the relevant *de minimis* level. If net emissions increases exceed the relevant *de minimis* value,  
15 a formal conformity determination process must be followed. Federal agency actions subject to the  
16 general conformity rule cannot proceed until there is a demonstration of consistency with the SIP.  
17 According to 40 CFR Section 93.158, emissions are accounted for in the SIP if they are included  
18 through permitting (NSR or PSD) or other emissions budget plan or if full offsets are provided, or  
19 if measures are applied which will ensure the emissions can conform to the *de minimis*  
20 requirements.

## 21 **State**

### 22 **California Air Resources Board**

23 CARB oversees air quality planning and control throughout California by administering the SIP.  
24 CARB primarily ensures the implementation of the 1989 amendments to the California Clean Air  
25 Act of 1988 (CCAA), responding to the federal CAA requirements and regulating emissions from  
26 motor vehicles sold in California, as well as setting fuel specifications to further reduce vehicular  
27 emissions.

28 CARB is also responsible for regulations pertaining to toxic air contaminants (TACs). The Air  
29 Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly)  
30 was enacted in 1987 as a means to establish a formal air toxics emission inventory risk  
31 quantification program. AB 2588, as amended, establishes a process that requires stationary sources  
32 to report the type and quantities of certain substances their facilities routinely release into the air  
33 basin. Each air pollution control district ranks the data into high-, intermediate-, and low-priority  
34 categories. When considering the ranking, the potency, toxicity, quantity, volume, and proximity  
35 of the facility to receptors are given consideration by an air district. There are no ambient air quality

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<sup>1</sup> 40 CFR 93.153(b)(4)(d) Notwithstanding the other requirements of this subpart, a conformity determination is not required for the following Federal actions (or portion thereof): (1) The portion of an action that includes major or minor new or modified stationary sources that require a permit under the new source review (NSR) program (Section 110(a)(2)(c) and Section 173 of the Act) or the prevention of significant deterioration program (title I, part C of the Act).

1 standards for TAC emissions. TACs are regulated in terms of health risks to individuals and  
2 populations exposed to the pollutants.

3 CARB also has on- and off-road engine emission-reduction programs that would indirectly affect  
4 the proposed project's emissions through the phasing in of cleaner on- and off-road engines. CARB  
5 has adopted standards for emissions from various types of new on-road heavy-duty vehicles. 13  
6 CCR Section 1956.8 contains California's emission standards for on-road heavy-duty engines and  
7 vehicles, as well as test procedures. CARB has also adopted programs to reduce emissions from in-  
8 use heavy-duty vehicles, including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the  
9 Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards,  
10 and the School Bus Program.

11 In 2007, CARB enacted a regulation for the reduction of diesel particulate matter and oxides of  
12 nitrogen emissions from in-use off-road heavy-duty diesel-fueled vehicles (13 CCR Article 4.8,  
13 Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and  
14 oxides of nitrogen (NOx) emissions for owners of fleets of diesel-fueled off-road vehicles. It also  
15 limits idling, requires reporting of all vehicles to CARB using the Diesel Off-Road Online  
16 Reporting System (DOORS), restricts the addition of older vehicles into fleets, and requires  
17 emissions reductions through retiring, replacing, or repowering older engines or installing verified  
18 diesel emissions control strategies (i.e., exhaust retrofits). The regulation was amended in 2010 to  
19 delay the original timeline of the performance requirements, making the first compliance deadline  
20 January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501 to 5,000  
21 horsepower), and 2019 for small fleets (2,500 horsepower or less).

22 CARB has a Portable Equipment Registration Program that allows owners or operators of portable  
23 engines and associated equipment to register their units under a statewide program, with specified  
24 emission requirements, without having to obtain individual permits from local air districts.  
25 Additionally, CARB also has an Off-Road Compression-Ignition Engine Regulatory and  
26 Certification Requirement which is applicable to new heavy-duty off-road compression-ignition  
27 engines, including all heavy-duty off-road alternate-fueled compression-ignition engines, produced  
28 on or after January 1, 1996, and all other new 2000 model year and later off-road compression-  
29 ignition engines. Every new off-road compression-ignition engine that is manufactured for sale,  
30 sold, offered for sale, introduced or delivered for introduction into commerce, or imported into  
31 California is required to be certified for use and sale by the manufacturer through CARB.

### 32 **Title V and Extreme Attainment Designation**

33 In general, owner/operators of defined industrial or commercial sources that emit criteria air  
34 pollutants in quantities greater than the thresholds reported in 40 CFR 51 more than 25 tons per  
35 year (tpy) of NOx and ROG must process a Title V permit. For example, 50 tons per year (tpy) of  
36 NOx is the threshold for facilities in serious nonattainment areas for ozone, or 25 tpy in areas in  
37 severe nonattainment. In Extreme Nonattainment Designation areas, the definition of a major  
38 source which requires Title V permitting, changes from 25 tpy to 10 tpy. This change results in  
39 more businesses having to comply with Title V permitting requirements under the stricter Extreme  
40 nonattainment designation.

1 Title V does not impose any new air pollution standards, require installation of any new controls  
2 on the affected facilities, or require reductions in emissions. Title V does enhance public and  
3 USEPA participation in the permitting process and requires additional record keeping and reporting  
4 by businesses, which results in significant administrative requirements.

### 5 **California Renewable Portfolio Standard Program**

6 Senate Bill (SB) 1078 established California’s Renewable Portfolio Standard (RPS) program in  
7 2002. The RPS program requires electrical corporations and electric service providers to purchase  
8 a specified minimum percentage of electricity generated by eligible renewable energy resources.  
9 The bill requires the California Energy Commission to certify eligible renewable energy resources,  
10 to design and implement an accounting system to verify compliance with the RPS by retail sellers,  
11 and to allocate and award supplemental energy payments to cover above-market costs of renewable  
12 energy. Under SB 1078, each electrical corporation was required to increase its total procurement  
13 of eligible renewable energy resources by at least 1 percent per year so that 20 percent of its retail  
14 sales were procured from eligible renewable energy resources.

15 In 2006, SB 107 accelerated the RPS program by establishing a deadline of December 31, 2010,  
16 for achieving the goal of having 20 percent of total electricity sold to retail customers in California  
17 per year generated from eligible renewable energy resources.

18 The RPS goal was increased to 33 percent when Governor Schwarzenegger signed Executive Order  
19 S-14-08 in November 2008. Executive Order S-14-08 was later superseded by Executive Order S-  
20 21-09 on September 15, 2009. Executive Order S-21-09 directed the CARB to adopt regulations  
21 requiring 33 percent of electricity sold in the state come from renewable energy by 2020. On  
22 September 23, 2010, the CARB approved a Renewable Electricity Standard regulation.

23 On April 12, 2011, the California Senate passed legislation paralleling and expressly superseding  
24 CARB’s RPS program rules set forth on September 23, 2010. Pursuant to SB 1X-2, the statutory  
25 RPS was increased to 33 percent and the RPS program was expanded to include customer-owned  
26 utilities. In addition, SB 1X-2 limits the use of out-of-state tradable renewable energy certificates  
27 to 25 percent in 2013, 15 percent in 2016, and 10 percent thereafter.

28 On October 7, 2015, Governor Brown signed the Clean Energy and Pollution Act of 2015, or SB  
29 350, which increased the RPD goal from 33 percent to 50 percent by 2030. The legislation also  
30 required local publicly owned electric utilities to establish annual targets for energy efficiency  
31 savings and demand reduction consistent with this goal.

### 32 **Local**

#### 33 **Eastern Kern Air Pollution Control District**

34 The EKAPCD has primary responsibility for regulating stationary sources of air pollution situated  
35 within its jurisdictional boundaries, which includes Edwards AFB. To this end, the EKAPCD  
36 implements air quality programs required by State and federal mandates, enforces rules and  
37 regulations based on air pollution laws, and educates businesses and residents about their role in  
38 protecting air quality. The EKAPCD is also responsible for managing and permitting existing, new,  
39 and modified sources of air emissions within the Mojave Desert portion of Kern County and also

1 established the following rules and regulations to ensure compliance with local, State, and federal  
2 air quality regulations:

- 3 • **Rule 201.** Rule 201 establishes permitting requirements for stationary sources. Although  
4 the proposed project does not involve traditional stationary sources, on March 12, 2015,  
5 the EKAPCD adopted rules requiring commercial solar facilities to obtain Authority to  
6 Construct and Permit to Operate approval under Rule 201 to address fugitive dust  
7 emissions. Under Rule 201, these projects would be required to submit a Fugitive Dust  
8 Emissions Control Plan in accordance with Rule 402. In addition, the District is requiring  
9 a Fugitive Dust Emissions Monitoring Plan through which each facility would install  
10 upwind and downwind particulate matter air monitoring. The monitoring will be used to  
11 demonstrate compliance with the district rules and regulations.
- 12 • **Rule 210.1.** Rule 210.1 establishes stationary source offset levels for new and modified  
13 stationary sources of air pollutants. Under this rule, the EKAPCD has established required  
14 offsets for when the emissions from a source exceed the following trigger levels:
  - 15 – PM<sub>10</sub> - 15 tons/year;
  - 16 – Sulfur oxides (as SO<sub>2</sub>) - 27 tons/year;
  - 17 – Volatile organic compounds (VOCs) - 25 tons/year; and/or
  - 18 – NO<sub>x</sub> (as NO<sub>2</sub>) - 25 tons/year.
- 19 • **Rule 401.** Rule 401 states that a person shall not discharge into the atmosphere, from any  
20 single source of emissions whatsoever, any air contaminant from any single emissions  
21 source for a period or periods aggregating more than 3 minutes in any 1 hour which is:
  - 22 – As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as  
23 published by the United States Bureau of Mines, or
  - 24 – Of such opacity as to obscure an observer’s view to a degree equal to or greater than  
25 does smoke described in Subsection A [of the Rules].
- 26 • **Rule 402.** Rule 402 addresses significant man-made dust sources from active operations.  
27 An active operation is defined as “Activity capable of generating fugitive dust, including  
28 any open storage pile, earth-moving activity, construction/demolition activity, disturbed  
29 surface area, and non-emergency movement of motor vehicles on unpaved roadways and  
30 any parking lot served by an unpaved road subject to this Rule.” Rule 402 applies to  
31 specified bulk storage, earthmoving, construction and demolition, and man-made  
32 conditions resulting in wind erosion, and includes the following requirements:
  - 33 – A person shall not cause or allow emissions of fugitive dust from any active operation  
34 to remain visible in the atmosphere beyond the property line of the emission source.
  - 35 – A person shall utilize one or more Reasonably Available Control Measures (RACM)  
36 or Bulk Material Control Measures (BMCM) to minimize fugitive dust emissions from  
37 each source type that is part of any active operation, including unpaved roadways.
  - 38 – No person shall conduct a large operation without filing for and obtaining an approved  
39 fugitive dust emission control plan. Large operation is defined as “Any construction  
40 activity on any site involving 10 or more contiguous acres of disturbed surface area, or  
41 any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating  
42 more than 2,500 cubic yards per day of bulk materials at least three days per year.”

- 1           – EKAPCD may require onsite PM<sub>10</sub> monitoring for any large operation that causes  
2           downwind PM<sub>10</sub> ambient concentrations to increase more than 50 micrograms per  
3           cubic meter above upwind concentrations as determined by utilizing high-volume  
4           particulate matter samplers, or other USEPA-approved equivalent method(s).
- 5           • **Rule 404.1.** Rule 404.1 pertains to particulate matter concentrations – desert basin and  
6           states:
- 7           – A person shall not discharge into the atmosphere from any single source operation, in  
8           service on the date this Rule is adopted, particulate matter in excess of 0.2 grains per  
9           cubic foot of gas at standard conditions.
- 10          – A person shall not discharge into the atmosphere from any single source operation, the  
11          construction or modification of which commenced after the adoption of this Rule,  
12          particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.
- 13          • **Rule 419.** Rule 419 states that a person shall not discharge from any source whatsoever  
14          such quantities of contaminants or other material that cause injury, detriment, nuisance, or  
15          annoyance to any considerable number of persons or to the public or that endanger the  
16          comfort, repose, health, or safety of such persons or the public or that cause or have a  
17          natural tendency to cause injury or damage to business or property.
- 18          • **Rule 423.** Rule 423 adopts USEPA’s National Emissions Standards for Hazardous Air  
19          Pollutants (NESHAPs)<sup>2</sup> by reference, which grants EKAPCD the ability to ensure that all  
20          sources of hazardous air pollution would comply with applicable standards, criteria, and  
21          requirements set forth in Title 40, Chapter 1, parts 61 and 63, of the Code of Federal  
22          Regulations that are in effect as of February 10, 2010. As required by the CAA and CCAA,  
23          air basins or portions thereof have been classified as either “attainment” or “nonattainment”  
24          for each criteria air pollutant based on whether or not the standards have been achieved.  
25          Jurisdictions of nonattainment areas are also required to prepare an air quality management  
26          plan (AQMP) that includes strategies for achieving attainment. On July 27, 2017,  
27          EKAPCD adopted the 2017 Ozone Attainment Plan (EKAPCD, 2017). As a moderate  
28          ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available  
29          Control Technology rules for all sources of ozone precursor emissions. EKAPCD has  
30          fulfilled this mandate by adopting the Reasonably Available Control Technology (RACT)  
31          SIP for the 2008 Ozone NAAQS on May 11, 2017 (EKAPCD, 2017a).

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<sup>2</sup> NESHAPs are source-specific restrictions that are implemented by the USEPA and are not affected by state or local decisions. State and local districts enforce the NESHAPs and can only impose stricter standards than those proposed in the NESHAPs.

1 **Kern County General Plan**

2 The Kern County General Plan Land Use, Open Space, and Conservation Element includes goals,  
3 policies and implementation measures that aim to minimize air quality degradation of new  
4 development, and enhance county and regional air quality. The Land Use, Open Space, and  
5 Conservation Element seeks to ensure that the County accommodate anticipated future growth and  
6 development while maintaining a safe and healthful environment and a prosperous economy by  
7 preserving valuable natural resources and also establishes fugitive dust control measures as a  
8 requirement for discretionary projects and as required by the adopted rules and regulations of the  
9 San Joaquin Valley Unified Air Pollution Control District and the EKAPCD on ministerial permits  
10 The goals, policies, and implementation measures in the Kern County General Plan applicable to  
11 air quality, as related to the project, are provided below. The Kern County General Plan contains  
12 additional policies, goals, and implementation measures that are more general in nature and not  
13 specific to development such as the proposed project. Therefore, they are not listed below.

14 **Kern County General Plan Chapter 1. Land Use, Open Space, and Conservation**  
15 **Element**

16 Air Quality

17 Goal

18 Goal 1: Ensure that the County can accommodate anticipated future growth and  
19 development while maintaining a safe and healthful environment and a  
20 prosperous economy by preserving valuable natural resources, guiding  
21 development away from hazardous areas, and assuring the provision of adequate  
22 public services.

23 Policies

24 Policy 18: The air quality implications of new discretionary land use proposals shall be  
25 considered in approval of major developments. Special emphasis will be placed  
26 on minimizing air quality degradation in the desert to enable effective military  
27 operations and in the valley region to meet attainment goals.

28 Policy 19: In considering discretionary projects for which an Environmental Impact Report  
29 must be prepared pursuant to the California Environmental Quality Act, the  
30 appropriate decision making body, as part of its deliberations, will ensure that:

- 31 1. All feasible mitigation to reduce significant adverse air quality impacts have  
32 been adopted; and
- 33 2. The benefits of the proposed project outweigh any unavoidable significant  
34 adverse effects on air quality found to exist after inclusion of all feasible  
35 mitigation. This finding shall be made in a statement of overriding  
36 considerations and shall be supported by factual evidence to the extent that  
37 such a statement is required pursuant to the California Environmental Quality  
38 Act.

39 Policy 20: The County shall include fugitive dust control measures as a requirement for  
40 discretionary projects and as required by the adopted rules and regulations of the  
41 San Joaquin Valley Unified Air Pollution Control District and the Kern County  
42 Air Pollution Control District on ministerial permits.

43 Policy 21: The County shall support air districts efforts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions.

1 Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air  
2 Pollution Control District and the Kern County Air Pollution Control District  
3 toward air quality attainment with federal, state, and local standards.

4 **Implementation Measures**

5 Measure F: All discretionary permits shall be referred to the appropriate air district for  
6 review and comment.

7 Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall  
8 incorporate diesel exhaust reduction strategies including, but not limited to:

- 9 1. Minimizing idling time.  
10 2. Electrical overnight plug-ins.

11 Measure H: Discretionary projects may use one or more of the following to reduce air quality  
12 effects:

- 13 1. Pave dirt roads within the development.  
14 2. Pave outside storage areas.  
15 3. Provide additional low Volatile Organic Compounds (VOC) producing trees  
16 on landscape plans.  
17 4. Use of alternative fuel fleet vehicles or hybrid vehicles.  
18 5. Use of emission control devices on diesel equipment.  
19 6. Develop residential neighborhoods without fireplaces or with the use of  
20 Environmental Protection Agency certified, low emission natural gas  
21 fireplaces.  
22 7. Provide bicycle lockers and shower facilities on site.  
23 8. Increasing the amount of landscaping beyond what is required in the Zoning  
24 Ordinance (Chapter 19.86).  
25 9. The use and development of park and ride facilities in outlying areas.  
26 10. Other strategies that may be recommended by the local Air Pollution Control  
27 Districts.

28 Measure J: The County should include PM<sub>10</sub> control measures as conditions of approval for  
29 subdivision maps, site plans, and grading permits.

30 **Kern County General Plan Chapter 5. Energy Element**

31 **Solar Energy Development**

32 Policies

33 Policy 1: The County shall encourage domestic and commercial solar energy uses to  
34 conserve fossil fuels and improve air quality.

35 Policy 2: The County should attempt to identify and remove disincentives to domestic and  
36 commercial solar energy development.

37 The Mojave Specific Plan identifies policies that would promote the improvement of air quality  
38 and maintenance of state and federal air quality standards in the Mojave area, and establishes  
39 cooperation with the EKAPCD to implement the Air Quality Attainment Plan. The Plan also

1 encourages development that promotes energy conservation and that minimize the direct and  
2 indirect emissions of air contaminants.

3 The South of Mojave-Elephant Butte Specific Plan states that new development must be in  
4 compliance with the requirements of the California Health and Safety Code and the Kern County  
5 Health Department with regard to extraction and processing mineral resources (noise and air  
6 quality) or cessation of such operations (covering or fencing of openings).

7 The Willow Springs Specific Plan includes policies and implementation measures that require  
8 construction equipment to be fitted with the most modern emission control devices and compliance  
9 with the Mitigation/Implementation Measures and enactment of an approved Air Quality  
10 Attainment Plan.

### 11 **Kern County Best Management Practices for Dust Management**

12 As a result of coordination with various local stakeholders, including the Mojave Air and Space  
13 Port, members of the Mojave Chamber of Commerce, Rosamond Municipal Advisory Council, and  
14 numerous other community leaders, Kern County has imposed the conditions listed below.

- 15 • Development of a Site-Specific Dust Control Plan that considers ongoing community  
16 stakeholder input, to the extent feasible and practicable.
- 17 • Use of Global Positioning System (GPS) or lasers to level posts, generally avoiding grading  
18 except when elevation changes exceed design requirements.
- 19 • When grading is unavoidable, it is to be phased and done with the application of approved  
20 chemical dust palliatives that stabilize the earth.
- 21 • Use of dust suppression measures during road surface preparation activities, including  
22 grading and compaction.
- 23 • Final road surfaces must be stabilized to achieve a measurable threshold friction velocity  
24 (TFV – the wind speed at which erosion starts) equal to or greater than 100 centimeters per  
25 second.
- 26 • If ground is cleared, plant roots must be left in place where possible.
- 27 • Expanded onsite watering processes.
- 28 • Installation of wind barrier fencing or screening.
- 29 • Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved (i.e.,  
30 without asphalt) surface at the construction site.
- 31 • All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain  
32 at least 6 inches of freeboard.
- 33 • Sending mailings to residents within 1,000 feet of a project site.

34 Kern County is also carefully monitoring all solar construction activities to ensure that all  
35 mitigation measures are followed and are adequate to minimize dust-related health concerns.

1 **Air Quality Conformity Determination for Transportation Plans and Programs**

2 The CAA amendments of 1990 require a finding to be made stating that any project, program, or  
3 plan subject to approval by a metropolitan planning organization conforms to air plans for  
4 attainment of air quality standards. Kern Council of Governments (COG) is designated the  
5 Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern  
6 County. In that capacity, Kern COG models air quality projections on population projections in  
7 conjunction with current general plan designations and estimated vehicle miles as well as the  
8 current Regional Transportation Plan (RTP) and the federal transportation plan for Kern County.  
9 These results are compared to pollutant budgets for each basin approved by USEPA in the 1999  
10 base year. Kern County is contained within two air basins: San Joaquin Valley Air Basin (SJVAB)  
11 and the MDAB. Each air basin has its own plans and pollutant budgets. Kern COG makes  
12 conformity findings for each air basin.

13 Kern County recently prepared the 2019 Ozone Conformity Analysis as Amendment No. 2 to the  
14 2019 Federal Transportation Improvement Program (FTIP) and 2015 Ozone Conformity Analysis  
15 for the 2018 Regional Transportation Plan (RTP) and 2019 FTIP. The FTIP is a plan for the  
16 incremental implementation of the long-range RTP, which is a 20-year transportation plan. The  
17 conformity findings conclude that the FTIP and RTP result in emissions that are less than the  
18 emission budgets of baseline emissions for CO, VOC, NO<sub>x</sub>, and PM<sub>10</sub> (Kern Council of  
19 Governments, 2019).

20 **3.3.1.3 Environmental Setting**

21 CARB has divided California into regional air basins according to topographic drainage features.  
22 The project site is located in the MDAB and is under the jurisdiction of EKAPCD. The MDAB  
23 includes the eastern half of Kern County, the northern part of Los Angeles County, most of San  
24 Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is  
25 separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino  
26 Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi  
27 Mountains and the south end of the Sierra Nevada.

28 ***Topography and Meteorology***

29 Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic  
30 features. Air quality is a function of both the rate and location of pollutant emissions and the  
31 meteorological conditions and topographic features that influence pollutant movement and  
32 dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and  
33 air temperature gradients interact with the physical features of the landscape to determine the  
34 movement and dispersal of air pollutants, which affects ambient air quality.

35 The project site is located on the northwest corner of Edwards AFB, which is approximately 57  
36 miles southeast of the city of Bakersfield and approximately 7 miles north of Rosamond, and 6  
37 miles south of Mojave, in southeastern Kern County. The project site is located approximately 5  
38 miles south of SR 58 and SR 14 (Antelope Valley Freeway) is located approximately 1.1 miles to  
39 the west. The project site is bound by Trotter Avenue to the north and Lone Butte Road to the west.  
40 The area directly north and west of the project site includes scattered residential uses. The lands

1 abutting the project site to the east and south are undeveloped and are located within the perimeter  
2 of Edwards AFB. Vacant land covered with sparse, low-lying desert vegetation characterize the  
3 lands surrounding the rest of the proposed solar facility site. There are currently no active  
4 agricultural land uses within or surrounding the proposed solar facility site.

5 The proposed project lies within an undeveloped portion of Edwards AFB. The site is covered with  
6 low-lying desert vegetation and is generally flat (elevations ranging from approximately 2,545 feet  
7 above mean sea level (amsl) to approximately 2,480 feet amsl), with a few dirt roads traversing the  
8 site. The perimeter of the project site is partially surrounded by a chain-link barbed-wire fence  
9 along Lone Butte Road and Trotter Avenue. There are power lines along Division Street, which  
10 runs north-south through the western portion of the project site. There are also power lines located  
11 along Trotter Avenue, which turns at a slight diagonal to the southeast and through the eastern  
12 portion of the project site. Otherwise, there are no existing structures, paved drives, lighting, or  
13 other improvements on the site.

14 The Mojave Desert Air Basin, the basin in which the project is located, is bordered on the southwest  
15 by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass  
16 (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San  
17 Bernardino Mountains (the Morongo Valley). The Palo Verde Valley portion of the Mojave Desert  
18 lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose  
19 primary channel is the San Gorgonio Pass (2,300 feet) between San Bernardino and San Jacinto  
20 Mountains.

21 The MDAB is characterized by hot summers, cold winters, large diurnal ranges in temperature, low  
22 relative humidity, and irregular rainfall. The MDAB is an assemblage of mountain ranges  
23 interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains  
24 which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in  
25 the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of  
26 the MDAB to the Pacific Ocean and the blocking nature of the Sierra Nevada Mountains to the  
27 north. Air masses pushed onshore in Southern California by differential heating are channeled  
28 through the MDAB. The MDAB is separated from the Southern California coastal and central  
29 California valley regions by mountains (highest elevation approximately 10,000 feet), the passes  
30 of which form the main channels for these air masses.

1 Although local emissions contribute to poor air quality, the MDAB is also impacted by emissions  
2 from the San Joaquin Valley and the South Coast. The portion of the Mojave Desert immediately  
3 to the north of the San Gabriel and San Bernardino Mountains is heavily impacted by air pollutants  
4 from the South Coast. The movement of pollutants over the mountains into the MDAB from the  
5 South Coast alone impacts a broad area including the Twentynine Palms and Lancaster-Palmdale  
6 areas. In addition, the area within the MDAB immediately downwind of Tehachapi Pass also  
7 receives pollutants from the southern San Joaquin Valley, with the influence of pollutants from the  
8 San Joaquin Valley extending as far as Lancaster. Air quality violations in the town of Mojave in  
9 the eastern portion of Kern County are attributed entirely to the transport of pollutants from the San  
10 Joaquin Valley.

11 During the summer, the MDAB is generally influenced by a Pacific Subtropical High Cell that sits  
12 off the coast to the west, inhibiting cloud formation and encouraging daytime solar heating. The  
13 MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these  
14 frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives  
15 from infrequent warm, moist and unstable air masses from the south. Average temperatures recently  
16 recorded in the community of Rosamond, located approximately 6 miles west of the project site,  
17 range from a low of 29 degrees Fahrenheit (°F) in December to highs of 95° F in July and August  
18 (Intellicast, 2017). Rainfall is light, averaging about 0.1 inches in July and 1.62 inches (Intellicast,  
19 2017).

## 20 ***Sensitive Receptors***

21 Sensitive receptors are people who are considered to be more sensitive than others to air pollutants.  
22 The reasons for greater-than-average sensitivity include pre-existing health problems, proximity to  
23 emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent  
24 homes are considered sensitive receptors because children, elderly people, and the infirm are more  
25 susceptible to respiratory distress and other air-quality-related health problems than the general  
26 public. Residential areas are considered sensitive to poor air quality because people usually are in  
27 the home for extended periods of time, with associated greater exposure to ambient air quality.  
28 Recreational uses are also considered sensitive due to greater exposure to ambient air quality  
29 conditions because vigorous exercise associated with recreation places a high demand on the human  
30 respiratory system.

31 The project vicinity consists predominantly of agricultural and undeveloped land with scattered  
32 rural residential uses. The nearest residential receptors are located along the western and northern  
33 project boundaries. Rural residences are located immediately north of the project site along East  
34 Trotter Avenue (approximately 100 feet to the north) and west of the site along Lone Butte Road  
35 (approximately 2,800 feet to the west). The nearest residences to the Gen-Tie alignments are from  
36 approximately 50 feet away (North-South Gen-Tie Route Option 2). The nearest residence to  
37 North-South Gen-Tie Route Option 1 is at a distance of 185 feet (North-South Gen-Tie Route  
38 Option 1). The nearest residence to the East-West Gen-Tie Route is 1,195 feet away. The nearest  
39 hospital, Mojave Medical Center, is approximately 7 miles northeast of the site in the town of  
40 Mojave. The nearest school, Mojave Elementary, is also located in Mojave approximately 6 miles  
41 northeast of the site.

1 **National and State Ambient Air Quality Standards**

2 **Ambient Air Quality Standards**

3 Regulation of air pollution is achieved through both federal and State ambient air quality standards  
4 and permitted emission limits for individual sources of air pollutants. CARB has established and  
5 maintains a network of sampling stations (called the State and Local Air Monitoring Stations  
6 [SLAMS] network) that work in conjunction with local APCDs and air quality management  
7 districts to monitor ambient pollutant levels. Existing and probable future air quality in the project  
8 area can best be inferred from examining ambient air quality measurements taken at monitoring  
9 station(s) in the vicinity of the project area. As required by the CAA, USEPA has identified criteria  
10 pollutants and has established NAAQS to protect public health and welfare. NAAQS have been  
11 established for O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb. These pollutants are called “criteria” air  
12 pollutants because standards have been established for each of them to meet specific public health  
13 and welfare criteria.

14 To protect human health and the environment, the USEPA has set “primary” and “secondary”  
15 ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human  
16 health, particularly sensitive receptors such as children, the elderly, and individuals suffering from  
17 chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect  
18 the natural environment and prevent further deterioration of animals, crops, vegetation, and  
19 buildings.

20 **Regional and Local Standards**

21 The NAAQS establish the level for an air pollutant above which detrimental effects to public health  
22 or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that,  
23 depending on the pollutant, may not be equaled or exceeded more than once per year or in some  
24 cases as a percentile of observations. California has generally adopted more stringent ambient air  
25 quality standards for the criteria air pollutants (i.e., CAAQS). **Table 3.3-1, National and State**  
26 **Criteria Pollutant Standards and EKAPCD Attainment Status**, presents both sets of ambient air  
27 quality standards (i.e., national and state) as well as attainment status for each of these standards  
28 within the EKAPCD jurisdiction. If a pollutant concentration in an area is lower than the established  
29 standard, the area is classified as being in attainment for that pollutant. If the pollutant concentration  
30 meets or exceeds the standard (depending on the specific standard for the individual pollutants),  
31 the area is classified as a nonattainment area. If there are not enough data available to determine  
32 whether the standard is exceeded in an area, the area is designated “unclassified.”

1 As shown in Table 3.3-1, the EKAPCD is currently classified as nonattainment for the 1-hour and  
2 8-hour state ozone standards and moderate nonattainment for the national ozone standard.  
3 Additionally, the EKAPCD is classified as nonattainment for the state 24-hour PM<sub>10</sub> standard. The  
4 EKAPCD is currently in attainment and/or unclassified status for all other ambient air quality  
5 standards. California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl  
6 chloride; however, air emissions of these pollutants are not expected to occur under the project and  
7 thus these pollutants are not addressed further in this EIS/EIR.

### 8 ***Ambient Air Monitoring***

9 CARB has established and maintains a network of sampling stations (the SLAMS network) that  
10 work in conjunction with local air pollution control districts and air quality management districts  
11 to monitor ambient pollutant levels. The SLAMS network in Kern County consists of seven stations  
12 that monitor various pollutant concentrations. The locations of these stations were chosen to meet  
13 monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest  
14 pollutant concentrations, representative concentrations in areas of high population density, the  
15 impact of major pollution emissions sources, and general background concentration levels.

16 The EKAPCD is responsible for monitoring air quality in the Kern County portion of the MDAB  
17 and the Antelope Valley Air Quality Management District is responsible for monitoring air quality  
18 in the Los Angeles County portion of the MDAB. Air quality is monitored to determine whether  
19 pollutant concentrations meet state and national air quality standards. There are two air monitoring  
20 stations in the vicinity of the project area, the Mojave and the Lancaster air monitoring stations.  
21 **Table 3.3-2, *Air Quality Data Summary (2014–2016)***, shows the monitoring results for criteria  
22 pollutants (O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and NO<sub>2</sub>) for the past 3 years, along with the state and national  
23 standards. No data is available for CO, SO<sub>2</sub>, H<sub>2</sub>S, Vinyl Chloride or other toxic air contaminants in  
24 eastern Kern County. As shown, the state and federal ozone, PM<sub>2.5</sub>, and state PM<sub>10</sub> standards were  
25 exceeded on numerous occasions during the past 3 years.

1  
2

**TABLE 3.3-1  
 NATIONAL AND STATE CRITERIA POLLUTANT STANDARDS AND EKAPCD ATTAINMENT STATUS<sup>1</sup>**

Pollutant	Averaging Time	National Standard	State Standard	EKAPCD Attainment Status	
				National	State
Ozone	1 Hour	–	0.09 parts per million (ppm)	Attainment**	Nonattainment
	8 Hours	0.070 ppm	0.070 ppm	<b>Moderate Nonattainment*</b>	Nonattainment
Carbon Monoxide (CO)	1 Hour	35 ppm	20 ppm	Unclassifiable/Attainment	Unclassified
	8 Hours	9 ppm	9.0 ppm		
Nitrogen Dioxide (NO <sub>2</sub> )	1 Hour	0.100 ppm	0.18 ppm	Unclassified	Attainment
	Annual	0.053 ppm	0.030 ppm		
Sulfur Dioxide (SO <sub>2</sub> )	1 Hour	0.075 ppm	0.25 ppm	Unclassified	Attainment
	3 Hours	0.5 ppm	–		
	24 Hours	0.14 ppm	0.04 ppm		
	Annual	0.030 ppm	–		
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hours	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	Unclassifiable/Attainment	Nonattainment
	Annual	–	20 µg/m <sup>3</sup>		
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hours	35 µg/m <sup>3</sup>	–	Unclassifiable/Attainment	Unclassified
	Annual	12.0 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>		
Lead	Monthly	–	1.5 µg/m <sup>3</sup>	Unclassifiable/Attainment	Attainment
	Quarterly	1.5 µg/m <sup>3</sup>	–		
	Rolling 3-Month Average	0.15 µg/m <sup>3</sup>	–		

Notes: ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter.

<sup>1</sup> There was no data available for Sulfur Dioxide (SO<sub>2</sub>) at any of the monitoring stations.

\* The attainment status for the National 8-hour ozone standard reflects the 2008 standard (0.075 ppm); formal designations for the 2015 standard (0.070 ppm) have not yet been finalized.

\*\* 1-hour ozone NAAQS was revoked effective June 15, 2004. EKAPCD was in attainment for 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date. was June 21, 2004, therefore it did not become effective.

SOURCE: CARB, 2016a; USEPA, 2018; EKAPCD, 2014

3

1  
2

**TABLE 3.3-2  
AIR QUALITY DATA SUMMARY (2014–2016)**

Pollutant	Standard	Monitoring Data by Year <sup>a</sup>		
		2016	2015	2014
<b>Ozone</b>				
<b>Mojave – 923 Poole St. Site</b>				
Highest 1-Hour Average (ppm)		0.104	0.094	0.104
Days over State Standard	0.09	2	1	9
Highest 8-Hour Average (ppm)		0.093	0.084	0.095
Days over State Standard	0.070	55	33	95
Days over National Standard <sup>b</sup>	0.075	60	15	57
<b>Lancaster – 43301 Division St. Site</b>				
Highest 1-Hour Average (ppm)		0.108	0.132	0.101
Days over State Standard	0.09	3	26	3
Highest 8-Hour Average (ppm)		0.091	0.103	0.088
Days over State Standard	0.07	65	82	36
Days over National Standard <sup>b</sup>	0.075	30	53	17
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>				
<b>Lancaster – 43301 Division St. Site</b>				
Highest 1-Hour Average (ppm)		0.049	0.042	0.051
Days over State Standard	0.18	0	0	0
Days over National Standard	0.10	0	0	0
<b>Particulate Matter (PM<sub>10</sub>)</b>				
<b>Mojave – 923 Poole St. Site</b>				
Highest 24-Hour Average (µg/m <sup>3</sup> )		130.3	74.9	171.0
Days over State Standard	50	18	5	12
Days over National Standard	150	0	0	1
<b>Lancaster – 43301 Division St. Site</b>				
Highest 24-Hour Average (µg/m <sup>3</sup> ) <sup>a</sup>		131.5	123.8	131.5
Days over State Standard	50	NR	NR	NR
Days over National Standard	150	0	0	0
<b>Particulate Matter (PM<sub>2.5</sub>)</b>				
<b>Mojave – 923 Poole St. Site</b>				
Highest 24-Hour Average (µg/m <sup>3</sup> )		25.7	42.4	36.5
Days over National Standard	35	0	2	1
<b>Lancaster – 43301 Division St. Site</b>				
Highest 24-Hour Average (µg/m <sup>3</sup> )		64.8	10.4	42.0
Days over National Standard	35	2	0	1

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; NR = Not Reported

<sup>a</sup> Values are based on state sampling methods.

<sup>b</sup> On October 1, 2015, the national 8-hour ozone standard was lowered from 0.075 ppm to 0.070 ppm; however, days over the national 8-hour ozone standard identified in this table reflect the days over the previous 2008 (0.075 ppm) standard.

SOURCE: CARB, 2018

3

#### 1 **3.3.1.4 Air Pollutants of Concern**

2 The following is a general description of the physical and health effects from the governmentally  
3 regulated air pollutants shown in Table 3.3-1 as well as TACs and airborne fungus.

##### 4 **Ozone**

5 Ozone occurs in two layers of the atmosphere, the troposphere and the stratosphere. The layer  
6 surrounding the earth's surface is the troposphere, where “bad” ozone acts as an air pollutant that  
7 damages human health, vegetation, and many common materials. It is a key ingredient of urban  
8 smog. The troposphere extends to a level about 10 miles above ground level, where it meets the  
9 second layer, the stratosphere. The stratospheric or “good” ozone layer extends upward from about  
10 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

11 Bad ozone, a photochemical pollutant, needs reactive organic gases (ROG), NO<sub>x</sub> and sunlight to  
12 form. ROG and NO<sub>x</sub> are emitted from various sources throughout Kern County. Significant ozone  
13 formation generally requires an adequate amount of precursors and several hours of strong sunlight  
14 in a stable atmosphere. To reduce ozone concentrations, it is necessary to control the emissions of  
15 these ozone precursors.

16 Ozone, a regional air pollutant, is generated over a large area and transported and spread by the  
17 wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and  
18 pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by  
19 specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically  
20 NO<sub>x</sub> and ROG. Sources of precursor gases number in the thousands and include common sources  
21 such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of  
22 various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small  
23 businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place  
24 in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over  
25 large regions when emissions from motor vehicles and stationary sources are carried hundreds of  
26 miles from their origins.

27 Eastern Kern County has been designated as a nonattainment area for the NAAQS and CAAQS for  
28 O<sub>3</sub>. The data presented in Table 3.3-2 shows that the Mojave and Lancaster monitoring stations  
29 exceeded the 1-hour average ambient O<sub>3</sub> CAAQS and the 8-hour average ambient O<sub>3</sub> NAAQS and  
30 CAAQS numerous times between 2014 through 2016.

##### 31 **Health Effects**

32 While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high  
33 concentrations of ground-level ozone can adversely affect the human respiratory system. Many  
34 respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone  
35 levels. Ozone also damages natural ecosystems, such as forests and foothill communities,  
36 agricultural crops, and some man-made materials, such as rubber, paint, and plastic. High levels of  
37 ozone may negatively affect immune systems, making people more susceptible to respiratory  
38 illnesses, including bronchitis and pneumonia. Ozone also accelerates aging and exacerbates pre-  
39 existing asthma and bronchitis and, in cases with high concentrations, can lead to the development  
40 of asthma in active children (McConnell et al., 2002). Active people, both children and adults,

1 appear to be more at risk from ozone exposure than those with a low level of activity. Additionally,  
2 the elderly and those with respiratory disease are also considered sensitive populations for ozone.

3 Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells  
4 (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing  
5 inflammation and irritation, and it can induce symptoms such as coughing, chest tightness,  
6 shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the  
7 permeability of lung cells, rendering them more susceptible to toxins and microorganisms.  
8 Exposure to levels of ozone above the current ambient air quality standard leads to lung  
9 inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs.  
10 Elevated ozone concentrations also reduce crop and timber yields, damage native plants, and  
11 damage materials such as rubber, paints, fabric, and plastics (CARB 2016c and ALA, 2007).

### 12 **Reactive Organic Gases and Volatile Organic Compounds**

13 Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are two  
14 primary subsets of organic gases—ROGs and VOCs—which include all hydrocarbons except those  
15 exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and  
16 regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted  
17 by federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons  
18 or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants  
19 are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation of  
20 petroleum fuels, solvents, dry cleaning solutions, and paint. For indirect sources, Kern County has  
21 established an annual emission threshold of 25 tons per year. Any individual project that meets or  
22 exceeds this threshold would be considered by Kern County to have significant air quality impacts.  
23 There are no separate federal or California ambient air quality standards for ROGs.

### 24 **Health Effects**

25 The primary health effects of hydrocarbons result from the formation of ozone and its related health  
26 effects (see the ozone health effects discussion above). High levels of hydrocarbons in the  
27 atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through  
28 displacement. Carcinogenic forms of ROG are considered TACs. An example is benzene, which is  
29 a carcinogen. The health effects of individual ROGs are described under the *Toxic Air*  
30 *Contaminants* heading further in this section.

### 31 **Carbon Monoxide**

32 Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete  
33 combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless gas that is  
34 highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than 66  
35 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95  
36 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly  
37 in local areas with heavy traffic congestion. Other sources of CO emissions include industrial  
38 processes and fuel combustion in sources such as boilers and incinerators. Despite an overall  
39 downward trend in concentrations and emissions of CO, some metropolitan areas still experience  
40 high levels of CO. High CO concentrations develop primarily during winter when periods of light  
41 winds combine with the formation of ground level temperature inversions (typically from the

1 evening through early morning). These conditions result in reduced dispersion of vehicle emissions.  
2 Motor vehicles also exhibit increased CO emission rates at low air temperatures.

3 Eastern Kern County has been designated as an unclassified/attainment area for the NAAQS and  
4 CAAQS for CO. Table 3.3-2 reports insufficient data for the CO monitoring at the Mojave or  
5 Lancaster monitoring stations during the 3-year period from 2014 through 2016.

### 6 **Health Effects**

7 When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-  
8 carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and  
9 reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those  
10 who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher  
11 levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced  
12 mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic  
13 diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual  
14 impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty  
15 performing complex tasks, and, with prolonged enclosed exposure, death.

16 The adverse health effects associated with exposure to ambient and indoor concentrations of CO  
17 are related to the concentration of carboxyhemoglobin in the blood. Health effects observed may  
18 include an early onset of cardiovascular disease; behavioral impairment; decreased exercise  
19 performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and  
20 increased daily mortality rate (Fierro et al., 2001).

### 21 **Oxides of Nitrogen**

22 Oxides of nitrogen is a family of highly reactive gases that is a primary precursor to the formation  
23 of ground-level ozone, and reacts in the atmosphere to form acid rain. NO<sub>x</sub> is emitted from the use  
24 of solvents and combustion processes in which fuel is burned at high temperatures, principally from  
25 motor vehicle exhaust and stationary sources (i.e., electric utilities and industrial boilers). In terms  
26 of NO<sub>x</sub> emissions, the two principal species of NO<sub>x</sub> are nitric oxide (NO) and NO<sub>2</sub>, with the vast  
27 majority (95 percent) of the NO<sub>x</sub> emissions being composed of NO. NO is converted to NO<sub>2</sub> by  
28 several processes—the two most important of these are (1) the reaction of NO with ozone, and (2)  
29 the photochemical reaction of NO with hydrocarbons. A brownish gas, NO<sub>x</sub> is a strong oxidizing  
30 agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates. Peak  
31 readings of NO<sub>2</sub> occur in areas that have a high concentration of combustion sources (e.g., motor  
32 vehicle engines, power plants, refineries, and other industrial operations).

33 For indirect sources, Kern County has established an annual emission threshold of 25 tons calendar  
34 per year for NO<sub>x</sub>. Any individual project that meets or exceeds this threshold would be considered  
35 by Kern County to have significant air quality impacts.

36 Eastern Kern County has been designated as an unclassified area for the NAAQS and CAAQS for  
37 NO<sub>2</sub>. Table 3.3-2 shows that neither the federal or state NO<sub>2</sub> standards were exceeded at the  
38 Lancaster monitoring station over the 3-year period of 2014 through 2016.

1 **Health Effects**

2 NO<sub>x</sub> is an ozone precursor that combines with ROG to form ozone (see discussion of ozone above  
3 for the health effects of ozone).

4 Direct inhalation of NO<sub>x</sub> can also cause a wide range of health effects. NO<sub>x</sub> can irritate the lungs,  
5 cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term  
6 exposures (e.g., less than 3 hours) to low levels of NO<sub>2</sub> may lead to changes in airway  
7 responsiveness and lung function in individuals with pre-existing respiratory illnesses. These  
8 exposures may also increase respiratory illnesses in children. Long-term exposures to NO<sub>2</sub> may  
9 lead to increased susceptibility to respiratory infection and may cause irreversible lung damage.  
10 Other health effects associated with NO<sub>2</sub> are an increase in the incidence of chronic bronchitis and  
11 lung irritation. Chronic exposure to NO<sub>2</sub> may lead to eye and mucus membrane aggravation, along  
12 with pulmonary dysfunction. NO<sub>x</sub> can cause fading of textile dyes and additives, deterioration of  
13 cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne  
14 NO<sub>x</sub> can also impair visibility.

15 NO<sub>x</sub> is a major component of acid deposition in California. NO<sub>x</sub> may affect both terrestrial and  
16 aquatic ecosystems. NO<sub>x</sub> in the air is a potentially significant contributor to a number of  
17 environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs  
18 when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water,  
19 producing an environment that is destructive to fish and other animal life.

20 Epidemiological studies have also shown associations between NO<sub>2</sub> concentrations and daily  
21 mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory  
22 conditions.

23 NO<sub>x</sub> contributes to a wide range of environmental effects both directly and indirectly when  
24 combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and  
25 wetland systems can lead to changes in plant species composition and diversity. Similarly, direct  
26 nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead  
27 to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe  
28 depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen,  
29 alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss  
30 of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants.  
31 Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic  
32 to fish and other aquatic organisms. NO<sub>x</sub> also contributes to visibility impairment (California Air  
33 Pollution Control Officers Association, 2012).

34 ***Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)***

35 Particulate matter or airborne dusts are the small particles that remain suspended in the air for long  
36 periods of time. These are small enough to be inhaled, pass through the respiratory system and  
37 lodge in the lungs, possibly leading to adverse health effects. The composition of PM<sub>10</sub> and PM<sub>2.5</sub>  
38 can vary greatly with time, location, the sources of the material and meteorological conditions.  
39 PM<sub>10</sub> refers to particles less than or equal to 10 microns in aerodynamic diameter. PM<sub>2.5</sub> refers to  
40 particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM<sub>10</sub>. Dust,

1 sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main  
2 components of PM<sub>10</sub> and PM<sub>2.5</sub>. In addition to those listed previously, secondary particles can also  
3 be formed as precipitates from photochemical reactions of gaseous SO<sub>2</sub> and NO<sub>x</sub> in the atmosphere  
4 to create sulfates (SO<sub>4</sub>) and (NO<sub>3</sub>), respectively. Secondary particles are of greatest concern during  
5 the winter months when low inversion layers tend to trap the precursors of secondary particulates.

6 For indirect sources, Kern County has established an annual emission threshold of 15 tons per  
7 calendar year for PM<sub>10</sub>. Any individual project that meets or exceeds this threshold will be  
8 considered by Kern County to have significant air quality impacts.

9 The largest source of PM<sub>10</sub> and PM<sub>2.5</sub> in Kern County is vehicle movement over paved and unpaved  
10 roads from demolition and construction activities and farming operations. The southeastern portion  
11 of Eastern Kern County where the project site is located has been designated as an unclassified area  
12 for the NAAQS for PM<sub>10</sub> and NAAQS and CAAQS for PM<sub>2.5</sub>, and a nonattainment area for the  
13 CAAQS for PM<sub>10</sub>. Table 3.3-2 shows that PM<sub>10</sub> levels exceed the NAAQS at the Mojave  
14 monitoring station once in 2014 and the CAAQS at the Mojave monitoring station between 5 and  
15 18 times per year between 2014 and 2016. As depicted in Table 3.3-2, PM<sub>2.5</sub> exceeded the NAAQS  
16 at the Mojave and Lancaster monitoring stations between 0 and 2 times per year between 2014 and  
17 2016.

## 18 **Health Effects**

19 PM<sub>10</sub> and PM<sub>2.5</sub> particles are small enough—about one-seventh the thickness of a human hair, or  
20 smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory  
21 system’s natural defenses. Health problems begin as the body reacts to these foreign particles.  
22 Acute and chronic health effects associated with high particulate levels include the aggravation of  
23 chronic respiratory diseases, heart and lung disease, and coughing, and bronchitis and respiratory  
24 illnesses in children. Recent mortality studies have shown a statistically significant direct  
25 association between mortality and daily concentrations of particulate matter in the air. PM<sub>10</sub> and  
26 PM<sub>2.5</sub> can aggravate respiratory disease and cause lung damage, cancer, and premature death.  
27 Sensitive populations, including children, the elderly, exercising adults, and those suffering from  
28 chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of PM<sub>10</sub>.  
29 Non-health related effects include reduced visibility and soiling of buildings.

30 Although particulate matter can cause health problems for everyone, certain people are especially  
31 vulnerable to adverse health effects of PM<sub>10</sub> and PM<sub>2.5</sub>. These “sensitive populations” include  
32 children, the elderly, exercising adults, and those suffering from chronic lung disease such as  
33 asthma or bronchitis. Of greatest concern are recent studies that link PM<sub>10</sub> exposure to the  
34 premature death of people who already have heart and lung disease, especially the elderly. Acidic  
35 PM<sub>10</sub> can also damage manmade materials and is a major cause of reduced visibility in many parts  
36 of the United States.

37 Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic  
38 accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter  
39 (e.g., from diesel exhaust) not only bypasses the body’s defense mechanisms and becomes  
40 embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-

1 based studies in hundreds of cities in the United States and around the world have demonstrated a  
2 strong link between elevated particulate levels and premature deaths, hospital admissions,  
3 emergency room visits, and asthma attacks. Long-term studies of children's health conducted in  
4 California have demonstrated that particulate pollution may significantly reduce lung function  
5 growth in children (CARB and American Lung Association [ALA], 2007).

6 Attaining the California particulate matter standards would annually prevent about 6,500 premature  
7 deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years.  
8 This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand  
9 smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths  
10 resulted from homicide. Attaining the California particulate matter and ozone standards would  
11 annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for  
12 cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel  
13 particulate matter causes about 250 excess cancer cases per year in California (Kern County, 2006).

14 Currently, 57 percent of California's population lives in areas that exceed the national PM<sub>2.5</sub> air  
15 standard, while 90 percent live in areas that exceed California's PM<sub>2.5</sub> air standard (CARB and  
16 ALA, 2007).

### 17 **Sulfur Dioxide**

18 Sulfates (SO<sub>4</sub><sup>-2</sup>) are particulate product that comes from the combustion of sulfur-containing fossil  
19 fuels. When sulfur monoxide or SO is exposed to oxygen, it precipitates out into sulfates (SO<sub>3</sub> or  
20 SO<sub>4</sub>). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal  
21 and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the  
22 combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This  
23 sulfur is oxidized to SO<sub>2</sub> during the combustion process and subsequently converted to sulfate  
24 compounds in the atmosphere. The conversion of SO<sub>2</sub> to sulfates takes place comparatively rapidly  
25 and completely in urban areas of California because of regional meteorological features.

26 For indirect sources, Kern County has established an annual emission threshold of 27 tons per  
27 calendar year for SO<sub>x</sub>, as SO<sub>2</sub>. Any individual project that meets or exceeds this threshold will be  
28 considered by Kern County to have significant air quality impacts.

29 Eastern Kern County has been designated as an unclassified area for the NAAQS and attainment  
30 area for the CAAQS for SO<sub>2</sub> and as such, no longer monitors ambient levels of SO<sub>2</sub> in the MDAB.

### 31 **Health Effects**

32 SO<sub>2</sub> is a colorless, irritating gas with a pungent smell, primarily formed from the combustion of  
33 fossil fuels containing sulfur. High concentrations of SO<sub>2</sub> can result in temporary breathing  
34 impairment for children and adults with asthma who are active outdoors. Short-term exposures of  
35 individuals with asthma to elevated SO<sub>2</sub> levels during moderate activity may result in breathing  
36 difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness  
37 of breath. Other effects that have been associated with longer-term exposures to high concentrations  
38 of SO<sub>2</sub>, in conjunction with high levels of PM, include aggravation of existing cardiovascular  
39 disease, respiratory illness, and alterations in the lungs' defenses. SO<sub>2</sub> also is a major precursor to

1 PM<sub>2.5</sub>, which is a significant health concern and a main contributor to poor visibility (see also the  
2 discussion of health effects of particulate matter).

3 SO<sub>2</sub> not only has a bad odor, it can irritate the respiratory system. Exposure to high concentrations  
4 for short periods of time can constrict the bronchi and increase mucous flow, making breathing  
5 difficult. SO<sub>2</sub> tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and  
6 particulates are also present. SO<sub>2</sub> can also injure many plant species and varieties, both native and  
7 cultivated. Some of the most sensitive plants include various commercially valuable pines,  
8 legumes, red and black oaks, white ash, alfalfa, and blackberry. In addition, increases in SO<sub>2</sub>  
9 concentrations accelerate the corrosion of metals, probably through the formation of acids. SO<sub>2</sub> is  
10 a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint,  
11 various fibers, paper, leather, and electrical components. Increased SO<sub>2</sub> also contributes to impaired  
12 visibility. Particulate sulfate, much of which is derived from SO<sub>2</sub> emissions, is a major component  
13 of the complex total suspended particulate mixture.

#### 14 **Lead**

15 Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither  
16 created nor destroyed in the environment, so it essentially persists forever. Historically, lead was  
17 used to increase the octane rating in automobile fuel. However, because gasoline-powered  
18 automobile engines were a major source of airborne lead through the use of leaded fuels and that  
19 use has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

20 EKAPCD no longer monitors ambient levels of atmospheric lead in the MDAB. Eastern Kern  
21 County has been designated as an unclassifiable/attainment area for the NAAQS for Pb and an  
22 attainment area for the CAAQS for Pb.

#### 23 **Health Effects**

24 Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil,  
25 or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys,  
26 liver, nervous system, and other organs. Excessive exposure to lead may cause neurological  
27 impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead  
28 exposure is associated with damage to the nervous systems of fetuses and young children, resulting  
29 in learning deficits and lowered IQ. Recent studies also show that lead may be a factor in high  
30 blood pressure and subsequent heart disease. Lead can also be deposited on the leaves of plants,  
31 presenting a hazard to grazing animals and humans through ingestion.

32 This highly toxic metal has been used for many years in everyday products, and has been found to  
33 cause a range of health effects, from behavioral problems and learning disabilities, to seizures and  
34 death. Effects on the nervous systems of children are one of the primary health risk concerns from  
35 lead. In high concentrations, children can even suffer irreversible brain damage and death. Children  
36 6 years old and under are most at risk, because their bodies are growing quickly.

#### 37 **Vinyl Chloride**

38 Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills,  
39 publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified

1 sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such  
2 as PVC pipes, pipe fittings, doors, windows, bottles, protective gloves, imitation leather, inflatable  
3 products, and plastic cards. Vinyl chloride was used in the past as a refrigerant and aerosol  
4 propellant but is now banned from use in these applications in California.

### 5 **Health Effects**

6 In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride  
7 exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a  
8 relationship between exposure cancers of the lung and brain. There are currently no adopted  
9 ambient air standards for vinyl chloride. Short-term exposure to vinyl chloride has been linked with  
10 the following acute health effects (USEPA, 2016):

- 11 • Acute exposure of humans to high levels of vinyl chloride via inhalation has resulted in effects  
12 on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- 13 • Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans.  
14 Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness,  
15 irritation to the lungs and kidneys, inhibition of blood clotting in humans, and cardiac  
16 arrhythmias in animals.

17 Tests involving acute exposure of mice to vinyl chloride to have shown high acute toxicity from  
18 inhalation exposure to the substance. Long-term exposure to vinyl chloride concentrations has been  
19 linked with the following chronic health effects (USEPA, 2016).

- 20 • Liver damage may result in humans from chronic exposure to vinyl chloride, through both  
21 inhalation and oral exposure.
- 22 • A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air  
23 have developed a set of symptoms termed “vinyl chloride disease,” which is characterized by  
24 Raynaud’s phenomenon (fingers blanch and numbness and discomfort are experienced upon  
25 exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and  
26 scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- 27 • Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual  
28 and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous  
29 system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers)  
30 have also been reported in workers exposed to vinyl chloride.

31 Several potential but not verified reproductive/developmental health effects from vinyl chloride  
32 exposure have been identified (USEPA, 2016):

- 33 • Several case reports suggest that male sexual performance may be affected by vinyl chloride.  
34 However, these studies are limited by lack of quantitative exposure information and possible  
35 co-occurring exposure to other chemicals.
- 36 • Several epidemiological studies have reported an association between vinyl chloride exposure  
37 in pregnant women and an increased incidence of birth defects, while other studies have not  
38 reported similar findings.

- 1 • Epidemiological studies have suggested an association between men occupationally exposed  
2 to vinyl chloride and miscarriages during their wives' pregnancies, although other studies have  
3 not supported these findings.
- 4 • Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl  
5 chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the  
6 liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the  
7 incidence of angiosarcoma of the liver and cancer of the liver.

## 8 **Asbestos**

9 The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also  
10 known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes  
11 up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.  
12 Asbestos occurs in certain geologic environments that contain serpentinite and ultramafic rocks,  
13 which are known to be present in 44 of California's 58 counties. These rocks are particularly  
14 abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and  
15 Coast Ranges. According to information provided by the Department of Conservation Division of  
16 Mines and Geology (CDCDMG), the project site is not located in an area where naturally occurring  
17 asbestos is likely to be present (USGS, 2011b).

## 18 **Health Effects**

19 Asbestos can only adversely affect humans in its fibrous form, and these fibers must be broken and  
20 dispersed into the air and then inhaled. During geological processes, mineral asbestos can be  
21 crushed, causing it to become airborne. It also enters the air or water from the breakdown of natural  
22 deposits. Constant exposure to asbestos at high levels on a regular basis may cause cancer in  
23 humans. The two most common forms of cancer are lung cancer and mesothelioma, a rare cancer  
24 of the lining that covers the lungs and stomach.

## 25 **Toxic Air Contaminants**

26 "Hazardous air pollutants" (HAPs) is a term used by the federal CAA that includes a variety of  
27 pollutants generated or emitted by industrial production activities. Called TACs under the  
28 California Clean Air Act of 1988 (CCAA), 10 pollutants have been identified through ambient air  
29 quality data as posing the most substantial health risk in California. Direct exposure to these  
30 pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system and  
31 respiratory disorders. CARB provides emission inventories for only the larger air basins.

32 Sources include industrial processes such as petroleum refining and chrome-plating operations,  
33 commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. TACs  
34 do not have ambient air quality standards. Since no safe levels of TACs can be determined, there  
35 are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health  
36 risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information  
37 and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are  
38 subject to the toxic emission inventory requirements of the Act must prepare and submit toxic  
39 emission inventory plans and reports to CARB and periodically update those reports. While TACs  
40 do result in potential health risks for those exposed, the proposed project would not emit TACs

1 with the exception of diesel particulate matter and therefore only diesel particulate matter is  
2 described further in this analysis.

### 3 **Diesel Particulate Matter**

4 Diesel particulate matter (DPM) is a TAC that is emitted from both mobile and stationary sources.  
5 In California, on-road diesel-fueled engines contribute about 24 percent of the statewide total, with  
6 an additional 71 percent attributed to other mobile sources such as construction and mining  
7 equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute  
8 about 5 percent of total diesel particulate matter. Diesel exhaust and many individual substances  
9 contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to  
10 contribute to mutations in cells that can lead to cancer.

### 11 **Health Effects**

12 Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated  
13 by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates  
14 that about 70 percent of the cancer risk that the average Californian faces from breathing TACs  
15 stems from diesel exhaust particles.

16 Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes,  
17 nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies  
18 with human volunteers, diesel exhaust particles made people with allergies more susceptible to the  
19 materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes  
20 inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the  
21 frequency or intensity of asthma attacks. CARB estimates that diesel-particle levels measured in  
22 California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were  
23 no diesel particles in the air) in a population of one million people over a 70-year lifetime (CARB,  
24 2016b).

25 Diesel engines are a major source of fine-particle pollution. The elderly and people with  
26 emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle  
27 pollution. Numerous studies have linked elevated particle levels in the air to increased hospital  
28 admissions, emergency room visits, asthma attacks, and premature deaths among those suffering  
29 from respiratory problems. Because children's lungs and respiratory systems are still developing,  
30 they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is  
31 associated with increased frequency of childhood illnesses and can reduce lung function in children.  
32 In California, diesel exhaust particles have been identified as carcinogens (CARB, 2000).

### 33 ***Airborne Fungus (Valley Fever)***

34 Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the  
35 most studied and oldest known fungal infections. Valley Fever most commonly affects people who  
36 live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both  
37 humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides*  
38 *immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in  
39 most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When

1 weather and moisture conditions are favorable, the fungus “blooms” and forms many tiny spores  
2 that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-  
3 moving activities and become airborne. Agricultural workers, construction workers, and other  
4 people who work outdoors and who are exposed to wind and dust are more likely to contract Valley  
5 Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also  
6 more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change  
7 into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule  
8 grows and bursts, releasing endospores, which then develop into more spherules.

9 The CI fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial  
10 grounds. The spores become airborne when the soil is disturbed by winds, construction, farming,  
11 and soil-disturbing activities. This type of fungus is endemic to the southwestern United States and  
12 more common in Kern County. The ecological factors that appear to be most conducive to the  
13 survival and replication of the fungal spores are high summer temperatures, mild winters, sparse  
14 rainfall, and alkaline, sandy soils. During drought years, the number of organisms competing with  
15 CI decreases, and the CI remains alive, but dormant. When rain finally occurs, the arthroconidia  
16 germinate and multiply more than usual because of a decreased number of other competing  
17 organisms. Later, the soil dries out in the summer and fall, and the fungi can become airborne and  
18 potentially infectious.

### 19 **Health Effects**

20 About 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at  
21 all. Of those who are exposed and seek medical treatment, the most common symptoms include  
22 fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps  
23 may develop on the skin. One important fact to mention is that these symptoms are not unique to  
24 Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease  
25 requires specific laboratory tests such as: (1) microscopic identification of the fungal spherules in  
26 infected tissue, sputum or body fluid sample; (2) growing a culture of *CI* from a tissue specimen,  
27 sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever)  
28 against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin  
29 Test (called coccidioidin or spherulin), which indicate prior exposure to the fungus (Valley Fever  
30 Center for Excellence, 2017). It should be noted that the incident rate for Valley Fever in Kern  
31 County within the MDAB is less than the incident rate in Kern County within the San Joaquin  
32 Valley Air Basin, where the highest incidence rate within California occurs (KCPHSD, 2017).

33 Valley Fever is not contagious, and therefore, cannot be passed on from person to person. Most of  
34 those who are infected would recover without treatment within 6 months and would have a life-  
35 long immunity to the fungal spores. In severe cases, especially in those patients with rapid and  
36 extensive primary illness, those who are at risk for dissemination of disease, and those who have  
37 disseminated disease (fungus leaves the lungs and goes to other places in the body), antifungal drug  
38 therapy is used. The type of medication used and the duration of drug therapy are determined by  
39 the severity of disease and response to the therapy. The medications used include ketoconazole,  
40 itraconazole and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given  
41 intravenously or inserted into the spinal fluid, for rapidly progressive disease. Although these

1 treatments are often helpful, evidence of disease may persist and years of treatment may be required  
2 (KCPHSD, 2018a).

3 The usual course of Valley Fever in healthy people is complete recovery within 6 months. In most  
4 cases, the body's immune response is effective and no specific course of treatment is necessary.  
5 About 5 percent of cases of Valley Fever result in pneumonia (infection of the lungs), while another  
6 5 to 10 percent of patients develop lung cavities after their initial infection with Valley Fever. These  
7 cavities occur most often in older adults, usually without symptoms, and about 50 percent of them  
8 disappear within 2 years. Occasionally, these cavities rupture, causing chest pain and difficulty  
9 breathing, and require surgical repair. Only 1 to 2 percent of those exposed who seek medical  
10 attention would develop a disease that disseminates (spreads) to other parts of the body other than  
11 the lungs (KCPHSD, 2018b).

12 **Table 3.3-3**, *Range of Complications of Valley Fever Cases*, presents the range of Valley Fever  
13 complications based on information from the Kern County Public Health Services Department.

**TABLE 3.3-3**  
**RANGE OF COMPLICATIONS OF VALLEY FEVER CASES**

<b>Infection Classification</b>	<b>Percent of Total Diagnosed Cases</b>
No Complications	50–60 percent
Acute Pneumonia	40–50 percent
Chronic Progressive Pneumonia	5 percent
Pulmonary Nodules and Cavities	5–10 percent
Disseminated	1–5 percent

SOURCE: KCPHSD, 2018b.

14

1 Factors that increase your chances of getting Valley Fever in Kern County include the length of  
2 time living in the county, duration of time spent in dusty conditions, being caught in a dust storm,  
3 activities involving intensive contact with undisturbed soils, duration of time spent outdoors,  
4 spending time outside in June through December, being a male, aged 15 to 44, and the area of the  
5 county you live in (KCPHSD, 2018c). Residents new to the San Joaquin Valley are at a higher risk  
6 of infection due primarily to low immunity to this particular fungus. Many long-time residents  
7 exposed to Valley Fever have recovered and therefore developed a life-long immunity to the  
8 disease. The areas of Kern County that have the most incidents of Valley Fever exposure are  
9 northeast Bakersfield, Lamont-Arvin, Taft, and Edwards AFB. The Valley Fever fungus has been  
10 identified in soil samples taken near the California State University Bakersfield campus. In Kern  
11 County, there are approximately 500 cases of Valley Fever reported in a typical year. However,  
12 during epidemic years, the number of reported cases can increase to 1,500, or more. The number  
13 of reported cases within Kern County during the last 4 years has ranged from a low of 1,013 in  
14 2014 to a high of 2,310 in 2016 (KCPHSD, 2018d). The number deaths from Valley Fever within  
15 Kern County during the last 4 years has ranged from a low of 6 in 2016 to a high of 22 in 2014  
16 (KCPHSD, 2018e).

## 17 3.3.2 Environmental Consequences

18 This section of the EIS/EIR describes the environmental consequences relating to air quality for  
19 the proposed project. It describes the methods used to determine the effects of the proposed project  
20 and lists the thresholds used to conclude whether an effect would be significant. Where warranted,  
21 measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for)  
22 significant impacts accompany each impact discussion.

### 23 3.3.2.1 Assessment Methods/Methodology

24 Alternative A, the Proposed Action, would be the construction, operation, and maintenance of a  
25 photovoltaic facility of greater than 100 MW of energy on up to a maximum of 4,000 acres of  
26 undeveloped land which the Air Force proposes to lease to the developer. The Proposed Action  
27 would also include construction, operation and maintenance of a 230-kilovolt (kV) generation tie  
28 (gen-tie) line from the proposed solar facility to the Southern California Edison (SCE) Windhub  
29 Substation and/or privately owned Westwind Substation. There are three options for the north-  
30 south gen-tie connection and the Proposed Action would include only one of these. There are two  
31 options for the east-west gen-tie connection and the Proposed Action would include only one of  
32 these two east-west route options. The final gen-tie route will be determined by the ability to acquire  
33 access easements for construction and installation of the line from public and private entities.  
34 However, because all the possible gen-tie options would be similar in length, a singular  
35 construction schedule was assumed for all options.

36 The assumptions associated with the emission estimates are detailed in a Memorandum titled  
37 Edwards Air Force Base Solar Facility Air Quality and Greenhouse Gas Emissions Methodology  
38 and Emissions Calculations (Dudek, 2018), prepared by Dudek, in Appendix B2 of this EIS/EIR.  
39 Project-generated criteria air pollutant emissions were estimated using the California Emissions  
40 Estimator Model (CalEEMod) version 2016.3.2, the latest model available for both short-term  
41 construction and long-term operational criteria air pollutant emissions. The use of CalEEMod is

1 consistent with Kern County recommendations for project level review since CalEEMod uses  
2 current emission factors and default values and has the ability to quantify indirect air quality  
3 emissions and air quality mitigation (Kern County, 2006).

4 Per the Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact  
5 Reports (Kern County, 2006), this air quality modeling analysis assessed the PM<sub>10</sub> and PM<sub>2.5</sub>  
6 ambient air quality impacts associated with the project to determine if project emissions are  
7 predicted to cause or contribute to a violation of ambient air quality standards by exceeding the  
8 NAAQS and/or CAAQS.

### 9 **Construction Assumptions**

10 Emissions from the construction phase of the project were estimated using CalEEMod.  
11 Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were  
12 based on information provided in the previous air quality assessment and CalEEMod default values  
13 when project specifics were not known (Edwards AFB, 2017).

14 For purposes of estimating project emissions, and based on information provided by the project  
15 applicant, this analysis assumed an original start date of July 2018 with construction ending in  
16 2020, which yields a conservative estimate of emissions as it assumed that construction activities  
17 would occur at the earliest feasible date and applied the mobile source and fugitive dust emission  
18 factors for that date.<sup>3</sup> Mobile source and fugitive emission factors are slightly less each year due  
19 to more stringent standards, so an earlier start date would result in higher emissions. Construction  
20 of the project has been pushed back and will now commence in July 2020 and last approximately  
21 24 months, ending in July 2022. Since construction emissions go down over time, this analysis is  
22 still valid and is a conservative estimate of project emissions, as it results in higher emissions than  
23 if the analysis was rerun using the new construction start date.

24 The phasing of construction activities described below represents the highest possible emissions;  
25 with all phases of solar facility construction happening directly after one another. The analysis  
26 contained herein is based on the following assumptions (durations are approximated):

- 27 • Solar Facility Construction July 2020 – July 2022 (24 months)
- 28 • Gen-tie Construction October 2020 – July 2021 (9 months)

29 **Table 3.3-4, Construction Equipment**, details the anticipated construction equipment, quantity, and  
30 usage for construction of the solar facility and the gen-tie. It also provides estimates for vehicle  
31 trips. The analysis assumes that heavy construction equipment would be operating at the site for  
32 approximately 8 hours per day, 5 days per week (22 days per month), during project construction.

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<sup>3</sup> This analysis assumed a construction start date of July 2018, which represents the earliest date construction would be initiated at the time the Project was proposed. The earliest start date for construction of the Project represents the worst-case scenario for air quality and GHG emissions because equipment and vehicle emission factors for later years would be slightly less each year due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles. Thus, although construction will not occur until 2020, the analysis of construction starting in 2018 would be more conservative, as this year would yield higher emissions than those in 2020. Thus, the analysis provided in this Draft EIS/EIR is a conservative analysis and is still valid, although the construction start date has been moved out 2 years.

1 Construction worker estimates, vendor and haul truck trips by construction phase were based on  
2 assumptions in previous air quality assessments for this proposed project. It was assumed there  
3 would be an average of 550 peak daily workers for a total of 1,100 one-way trips, 339 daily  
4 miscellaneous delivery trips, 504 daily water truck trips (vendor trucks) and 10 daily panel delivery  
5 trips (haul trips). No additional haul truck trips for earthwork materials were assumed because  
6 earthwork volumes are anticipated to be balanced on site. Based off the information provided in  
7 previous air quality assessments trip length for worker, vendor and haul trips were assumed to be  
8 30, 7.3, and 114 miles respectively. Additionally, it was assumed that workers and vendors would  
9 travel 0.27 miles on unpaved roads each trip and haul trucks would travel 2.5 miles on unpaved  
10 roads each trip (Edwards AFB, 2017).

11 Dispersion modeling for PM<sub>10</sub> and PM<sub>2.5</sub> was performed using the American Meteorological  
12 Society/Environmental Protection Agency Regulatory Model (AERMOD), which is the model the  
13 EKAPCD requires for atmospheric dispersion of emissions. Offsite concentrations were modeled  
14 for the construction phase with the estimated project emissions in order to determine compliance  
15 with NAAQS and CAAQS. Principal parameters of AERMOD for project construction include:

### 16 ***Operational Assumptions***

17 Long-term operational emissions associated with the proposed project were also calculated using  
18 CalEEMod, version 2016.3.1. Long-term emissions are caused by operational mobile sources from  
19 periodic maintenance and cleaning of the solar panels.

### 20 **Area Sources**

21 CalEEMod emission factors were used to estimate operational emissions from area sources, which  
22 include architectural coatings. Based on the type of structure for the Operation and Maintenance  
23 (O&M) building, it is assumed that the surface area for painting equals two times the floor square  
24 footage, with 75 percent assumed for interior coating and 25 percent assumed for exterior coating.

1  
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**TABLE 3.3-4  
CONSTRUCTION EQUIPMENT**

Construction Phase	Equipment		One-way Vehicle Trips			
	Equipment Type	Quantity	Usage Hours	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips
Solar Facility Construction	Excavators	9	1.1			
	Forklifts	25	0.5			
	Generator Sets	4	8			
	Off-Highway Tractors	3	0.3			
	Off-Highway Tractors	3	0.5			
	Other Construction Equipment	30	2	1,100	843	5,200
	Other Construction Equipment	20	1.1			
	Other Material Handling Equipment	10	1.5			
	Rubber Tired Dozers	2	1.4			
	Scrapers	4	1.6			
	Tractors/Loaders/Backhoes	35	0.7			
	Trenchers	20	1.2			
Gen-Tie Construction	Cranes	1	1.6			
	Excavators	1	6			
	Other Construction Equipment	2	2	116	60	0
	Other Construction Equipment	2	4			
	Other Material Handling Equipment	1	4			
	Tractors/Loaders/Backhoes	1	4			

SOURCE: Dudek, 2017.

3

4 **Energy Sources**

5 Electricity use would contribute indirectly to criteria air pollutant emissions; however, since criteria  
6 pollutant emissions occur at the site of the power plant, which is typically off site, they were not  
7 quantified for this project.

8 **Mobile Sources**

9 Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty  
10 trucks) traveling to and from the project site. Based on conservative estimates for vehicular travel,  
11 the project is anticipated to have up to 8,778 trips per year during operation, accounting for the  
12 commutes and performance of regular inspection and maintenance activities by 24 full-time-  
13 equivalent staff. Estimated activity data from the Applicant and CalEEMod were used to calculate  
14 emissions from this source category.

1 **Off-Road Vehicles**

2 To conduct maintenance activities onsite, including but not limited to panel replacement and repair,  
3 it was assumed that two forklifts and two backhoes would be employed for 8 hours a day, 12 days  
4 a year. This information in conjunction with CalEEMod values were used to estimate operational  
5 off-road vehicle GHG emissions in CalEEMod.

6 **TAC Emissions**

7 During construction and operation of the proposed project, the use of diesel-powered equipment at  
8 the project site would generate emissions of DPM, which is a TAC. As the potential for health risk  
9 impacts could occur due to onsite DPM emissions from the construction and operation phases of  
10 the project, a health risk assessment was conducted to determine the potential cancer risk to the  
11 closest sensitive receptors.

12 Cancer risk is defined as the increase in probability (chance) of an individual developing cancer  
13 due to exposure to a carcinogenic compound, typically expressed as the increased chances in one  
14 million. The cancer risk from exposure to a TAC is estimated by calculating the inhalation (and, if  
15 applicable, ingestion or dermal) dose in units of milligrams/kilogram body weight per day. The  
16 dose is based on an ambient concentration in units of micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), age  
17 sensitivity factors, breathing rates, exposure period, and fraction of time spent at home. The cancer  
18 risk is calculated by multiplying the dose by the cancer potency factor, expressed as  
19 (milligrams/kilogram body weight per day)<sup>-1</sup>. Cancer risks are typically calculated for all  
20 carcinogenic TACs and summed to calculate the overall increase in cancer risk to an individual.  
21 The calculation procedure assumes that cancer risk is proportional to concentrations at any level of  
22 exposure and that risks due to different carcinogens are additive. This approach is generally  
23 considered a conservative assumption at low doses and is consistent with OEHHA's regulatory  
24 approach.

25 The cancer risk calculations were performed by multiplying the predicted dispersion modeled  
26 output data (AERMOD data) by the TAC emissions and the appropriate risk values. The exposure  
27 and risk equations that were used to calculate the cancer risk at receptors are integrated in the  
28 Hotspot Analysis and Reporting Program, Version 2 (HARP 2) model, in accordance with Risk  
29 Assessment Guidelines (OEHHA, 2015).

30 The noncancer health impact of an inhaled TAC is measured by the hazard quotient, which is the  
31 ratio of the ambient concentration of a TAC in units of  $\mu\text{g}/\text{m}^3$  divided by the reference exposure  
32 level (REL), also in units of  $\mu\text{g}/\text{m}^3$ . The REL is the concentration at or below which no adverse  
33 health effects are anticipated. The REL is typically based on health effects to a particular target  
34 organ system, such as the respiratory system, liver, or central nervous system. Hazard quotients of  
35 individual TACs are then summed for each target organ system to obtain a hazard index (HI). For  
36 DPM, the target organ system is the respiratory system.

37 In addition to the potential cancer risk, DPM has chronic (i.e., long-term) noncancer health impacts.  
38 The chronic noncancer HI for DPM was calculated by dividing the maximum modeled annual  
39 average concentration of TACs by its REL as implemented by HARP 2.

1 The dispersion of DPM was modeled using the AERMOD dispersion model, along with  
2 meteorological data provided by the CARB for the Edwards AFB, and the resultant health impacts  
3 were calculated using the CARB HARP 2. For the residential health risk associated with  
4 construction, the health risk assessment (HRA) assumes exposure would start in the third trimester  
5 of pregnancy and occur 8 hours per day, 5 days per week, for 24 months to account for the short-  
6 term construction activity duration. For the residential health risk associated with operations, the  
7 HRA assumes exposure would start in the third trimester of pregnancy and occur 8 hours per day,  
8 12 days per year, for 30 years to account for the long-term activity duration.

### 9 **3.3.2.2 Determination of Impacts/Thresholds of Significance**

10 For this analysis, an environmental impact was considered significant related to air quality if it  
11 would result in any of the effects listed below. These effects are based on common NEPA standards,  
12 CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice.

#### 13 ***NEPA: General Conformity Analysis***

14 Independent of NEPA, CAA Section 176 requires federal agencies that are funding, permitting, or  
15 approving an activity to ensure the activity conforms to the applicable SIP adopted to eliminate or  
16 reduce air quality violations (42 USC 7506). The CAA conformity *de minimis* levels are used as  
17 mass emissions indicators for adverse annual emissions of nonattainment pollutants to the federal  
18 ambient air quality standard. The study area is nonattainment for the NAAQS for the ozone 8-hour  
19 standard; therefore, emissions of ozone precursors (i.e., ROG and NO<sub>x</sub>) are the prime concern  
20 relative to meeting the NAAQS in the study area. Thus, the serious nonattainment area factors were  
21 used for the thresholds as the area is in serious nonattainment for those NAAQS. For the other  
22 criteria pollutants, the factors for the maintenance areas were used for the thresholds. For this  
23 analysis, the *de minimis* levels are used to gauge the potential for an Action Alternative to result in  
24 an exceedance of a NAAQS (USEPA, 2017). The federal *de minimis* levels of ROG, NO<sub>x</sub> and PM<sub>10</sub>  
25 are used to see if an exceedance of a NAAQS would have a substantial effect on the air quality  
26 environment.

- 27 • **ROG (Ozone)** - 50 tons per year
- 28 • **NO<sub>x</sub> (Ozone)**– 50 tons per year
- 29 • **PM<sub>10</sub>** - 100 tons per year
- 30 • **PM<sub>2.5</sub>**– 100 tons per year
- 31 • **CO** – 100 tons per year
- 32 • **SO<sub>2</sub>** – 100 tons per year

#### 33 ***CEQA: Impact Significance Determination***

34 The Kern County CEQA Implementation Document and Kern County Environmental Checklist  
35 identify the following criteria, as established in Appendix G of the CEQA Guidelines, to determine  
36 if a project could potentially have a significant adverse effect to air quality.

- 1 A project could have a significant adverse effect on air quality if it:
- 2 • Conflicts with or obstructs implementation of the applicable air quality plan.
  - 3 • Violates any air quality standard as adopted in (c)i or (c)ii, or as established by EPA or air  
4 district or contributes substantially to an existing or projected air quality violation.
  - 5 • Results in a cumulatively considerable net increase of any criteria pollutant for which the  
6 project region is considered nonattainment under an applicable federal or state ambient air  
7 quality standard (including releasing emissions that exceed quantitative thresholds for  
8 ozone precursors). Specifically, if implementation of the project would exceed any of the  
9 following adopted thresholds of the EKAPCD:
    - 10 – Construction and Operational and Area Sources:<sup>4</sup>
      - 11 ▪ 25 tons per year for ROG
      - 12 ▪ 25 tons per year for NO<sub>x</sub>
      - 13 ▪ 40 tons per year for SO<sub>x</sub>
      - 14 ▪ 15 tons per year for PM<sub>10</sub>
      - 15 ▪ 100 tons per year for CO
    - 16 – Stationary Sources, as determined by District Rules:
      - 17 ▪ 25 tons per year
    - 18 – Operations – Indirect Sources (motor vehicles):
      - 19 ▪ 137 pounds per day of ROG
      - 20 ▪ 137 pounds per day of NO<sub>x</sub>
  - 21 • Exposes sensitive receptors to substantial pollutant concentrations.
    - 22 – Cancer risk impacts
      - 23 ▪ MICR – 10 in one million (10<sup>-5</sup>)
    - 24 – Chronic non-cancer risk impacts
      - 25 ▪ Chronic Hazard Index (HIC) – 1.0
  - 26 • Creates objectionable odors affecting a substantial number of people.

27 The lead agency determined in the NOP (see Appendix A1) that there would be no impacts or less-  
28 than-significant impacts related to the potential for the proposed project to generate objectionable  
29 odors that would affect a substantial number of people. Therefore, this issue is not reviewed further  
30 in this EIS/EIR. Please refer to Appendix A1 for a copy of the NOP/IS and additional information  
31 regarding odors.

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<sup>4</sup> The thresholds are based on EKAPCD Rule 210.1 New and Modified Stationary Source Review.

### 3.3.3 Analysis of Environmental Effects

#### 3.3.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### **NEPA: General Conformity Analysis**

##### **Construction Criteria Pollutant Mass Emissions**

Alternative A would likely involve construction of the project over the course of a 2-year schedule that would likely occur over three calendar years. For the purposes of this analysis, it is assumed that the construction period would begin in July 2020 and would end in July 2022, which represents a reasonable scenario with individual sections of the facility being built directly after one another. Air pollutant exhaust emissions would be generated onsite by off-road equipment and vehicles (e.g., excavators, tractors, trenchers, forklifts, cranes) that would be used to prepare the project site and construct the solar facility and associated gen-tie line, and offsite by vehicles that would transport workers to the work sites and haul panels and various materials and supplies to and from the site. In addition to exhaust emissions, construction activities would generate fugitive dust in the form of PM<sub>10</sub> and PM<sub>2.5</sub> from onsite ground disturbance by heavy construction equipment as well as from vehicular travel on unpaved roads.

Daily and annual construction emissions by calendar year were estimated for Alternative A and are described in **Table 3.3-5, *Alternative A Estimated Maximum Unmitigated Construction Emissions***. For all assumptions used to estimate construction emissions, including the associated CalEEMod output files, refer to Appendix B2. As described in the table, maximum daily emissions of VOC and PM<sub>2.5</sub> would occur in 2020. Maximum daily emissions of NO<sub>x</sub>, CO, and SO<sub>x</sub> would occur in 2021 and maximum daily PM<sub>10</sub> emissions would occur in 2022. Maximum annual emissions would occur in the year 2021. As shown in Table 3.3-5, annual construction unmitigated emissions would not exceed *de minimis* levels and the project would not result in an exceedance of the NAAQS.

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**TABLE 3.3-5  
 ALTERNATIVE A ESTIMATED MAXIMUM UNMITIGATED CONSTRUCTION EMISSIONS**

<b>Daily Emissions</b>						
<b>Construction Year</b>	<b>Pollutants (pounds per day)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2020	32.58	248.33	224.20	0.62	542.57	65.39
2021	32.38	252.76	229.97	0.67	476.92	58.90
2022	29.04	226.82	214.94	0.66	545.69	64.81
<b>Maximum Daily Emissions</b>	<b>32.58</b>	<b>252.76</b>	<b>229.97</b>	<b>0.67</b>	<b>545.69</b>	<b>65.39</b>
<b>Annual Emissions</b>						
<b>Construction Year</b>	<b>Pollutants (tons per year)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2020	2.05	16.16	14.89	0.04	32.11	4
2021	3.78	30.51	28.30	0.08	55.77	7.06
2022	1.79	14.50	14.02	0.04	30.96	3.87
<b>Maximum Daily Emissions</b>	<b>3.78</b>	<b>30.51</b>	<b>28.30</b>	<b>0.08</b>	<b>55.77</b>	<b>7.06</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG). Refer to Appendix B2 for details regarding the construction emission estimates. SOURCE: Dudek, 2018

3

**Table 3.3-6, Alternative A Estimated Maximum Mitigated Construction Emissions**, shows the resulting maximum daily and annual emissions with incorporated project reduction design features, which includes use of tier 3 equipment and compliance with Rule 402, specifically limiting off-road vehicle speed to 15 miles per hour and watering twice daily. As shown in the table, maximum daily and annual emissions of VOC, NOx, PM<sub>10</sub> and PM<sub>2.5</sub> were reduced compared to the unmitigated emissions in Table 3.3-5. The project's overall annual emissions would be greatest in 2021. As shown in Table 3.3-6, annual mitigated construction emissions would not exceed *de minimis* levels and the project would not result in an exceedance of the NAAQS. Therefore, project construction would not result in adverse impacts.

**Reduced-Visibility Impacts**

Visibility at offsite locations may be impacted by emissions of airborne PM from short-term construction activities. Federally designated Class I areas are of particular concern. These include many wilderness areas and national parks. In addition, military aircraft use areas within the Upper Mojave Desert region, such as Edwards Air Force Base, Fort Irwin, China Lake Naval Weapons Station and the R-2508 Airspace Complex are also sensitive to reduced visibility from airborne PM.

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**TABLE 3.3-6  
ALTERNATIVE A ESTIMATED MAXIMUM MITIGATED CONSTRUCTION EMISSIONS**

<b>Daily Emissions</b>						
<b>Construction Year</b>	<b>Pollutants (pounds per day)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2020	22.48	183.21	234.32	0.62	163.87	24.73
2021	22.47	193.51	242.98	0.67	146.72	23.48
2022	20.07	179.09	229.09	0.66	165.86	25.03
<b>Maximum Daily Emissions</b>	<b>22.48</b>	<b>193.51</b>	<b>242.98</b>	<b>0.67</b>	<b>165.86</b>	<b>25.03</b>
<b>Annual Emissions</b>						
<b>Construction Year</b>	<b>Pollutants (tons per year)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2020	1.39	11.89	15.51	0.04	9.98	1.54
2021	2.57	23.31	29.82	0.08	17.57	2.83
2022	1.21	11.43	14.93	0.04	9.88	1.53
<b>Maximum Daily Emissions</b>	<b>2.57</b>	<b>23.31</b>	<b>29.82</b>	<b>0.08</b>	<b>17.57</b>	<b>2.83</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
SOURCE: Dudek, 2018

3

4 Visibility impact analyses are intended for stationary sources of emissions which are subject to the  
5 PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources. However,  
6 because the Project's will increase PM<sub>10</sub> emissions, a construction Ambient Air Quality Assessment  
7 (AAQA) was conducted to see how project emissions would impact the Class 1 area.

8 Maximum daily emissions were used as the basis for determining the project's potential impact on  
9 ambient air quality. For the initial assessment (Step 1) of the AAQA, the maximum background  
10 concentration of the project site for each pollutant and averaging period combination was added to  
11 the corresponding maximum ground-level concentration (GLC) from project-related construction.  
12 The sum of these values was then compared to the corresponding ambient air quality standard. If  
13 the incremental increase in concentration from project-related sources did not cause an exceedance  
14 of an ambient air quality standard, then the analysis was complete for that source/receptor/pollutant  
15 concentration. If the incremental increase did cause an exceedance of an ambient air quality  
16 standard, then the analysis proceeded to Step 2. Step 2 was similar to Step 1 with one major  
17 difference. For this step, the maximum GLC of each pollutant and averaging period combination  
18 were compared to the pollutant's corresponding significance impact level (SIL). The SIL is used to  
19 evaluate whether the project's construction emissions would contribute to a violation of an ambient  
20 air quality standard, where the background level is close to or exceeds an ambient air quality  
21 standard. If the maximum GLC did not exceed the corresponding SIL, then the analysis was

1 complete for that source/receptor/pollutant combination, and no further analysis was required.  
 2 **Table 3.3-7, *Alternative A Unmitigated Construction Ambient Air Quality Impact Assessment***  
 3 ***Results***, presents a summary of the two-step process taken to determine whether construction  
 4 activities associated with the project would cause or contribute to ambient air quality impacts.

5 **TABLE 3.3-7**  
 6 **ALTERNATIVE A UNMITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS<sup>1</sup>**

<b>Step 1 – Ambient Air Quality Standard Basis</b>				
<b>Impact Parameter</b>	<b>Applicable Standard</b>	<b>AAQS</b>	<b>Maximum Concentration: Project = Background Levels</b>	
		<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed AAQS?</b>
24-hour PM <sub>10</sub>	State	50	314	<b>Yes (Step 2)</b>
	Federal	150	327	<b>Yes (Step 2)</b>
Annual PM <sub>10</sub>	State	20	31	<b>Yes (Step 2)</b>
24-hour PM <sub>2.5</sub>	Federal	35	59	<b>Yes (Step 2)</b>
Annual PM <sub>2.5</sub>	State	12	7	<b>No</b>
	Federal	12	8	<b>No</b>

<b>Step 2 – USEPA Significant Impact Level Basis</b>			
<b>Impact Parameter</b>	<b>Class II EILs</b>	<b>Project Construction</b>	
	<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed SIL?</b>
24-hour PM <sub>10</sub>	5	143	<b>Yes</b>
Annual PM <sub>10</sub>	1	7	<b>Yes</b>
24-hour PM <sub>2.5</sub>	5	17	<b>Yes</b>

NOTES: AAQS = Ambient Air Quality Standard, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, USEPA = U.S. Environmental Protection Agency, SIL = Significant Impact Level.  
<sup>1</sup> Step 1 – the AAQS basis compares the background concentrations plus project contribution to the state and federal AAQS to determine if there would be an exceedance of the respective standard. For PM<sub>10</sub> and PM<sub>2.5</sub>, background concentrations already exceeded the applicable AAQS (except for annual state and federal PM<sub>2.5</sub> AAQS), so Step 2 – the SIL basis – compares the project contributions to levels determined by the EKAPCD to cause or contribute to ambient air quality exceedances and impacts.  
 SOURCE: Dudek, 2018

7  
 8 As shown in Table 3.3-7, Alternative A would result in construction activities that could generate  
 9 ambient concentration of PM<sub>10</sub> and PM<sub>2.5</sub> above applicable thresholds. **Table 3.3-8, *Alternative A***  
 10 ***Mitigated Construction Ambient Air Quality Impact Assessment Results***, presents the mitigated  
 11 construction AAQA.

12 As demonstrated in Table 3.3-8, PM<sub>10</sub> and PM<sub>2.5</sub> emissions would exceed the SIL and could result  
 13 in short-term unavoidable adverse impacts to visibility in a Class 1 area, even with incorporation  
 14 of recommended Mitigation Measures MM 3.3-1a through MM 3.3-8a for the solar facility portion  
 15 of the project site and Mitigation Measures MM 3.3-1b through MM 3.3-6b for the gen-tie portion  
 16 of the site (see Section 3.3.5 for mitigation measures). Therefore, Alternative A could result in or  
 17 contribute to a short-term exceedance of the state and federal PM<sub>10</sub> and PM<sub>2.5</sub> air quality standards.

1 Although this would technically not be a NEPA impact, it is Air Force policy to minimize the  
2 release of pollutants into the air as much as is technically and economically feasible (Air Force,  
3 2013) so the above-mentioned mitigation measures have been included to reduce potential impacts  
4 of the project. As shown, the mitigation measures do significantly reduce the amount of  
5 construction emissions the project would emit.

6 **TABLE 3.3-8**  
7 **ALTERNATIVE A MITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS<sup>1</sup>**

<b>Step 1 – Ambient Air Quality Standard Basis</b>				
<b>Impact Parameter</b>	<b>Applicable Standard</b>	<b>AAQS</b>	<b>Maximum Concentration: Project = Background Levels</b>	
		<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed AAQS?</b>
24-hour PM <sub>10</sub>	State	50	214	<b>Yes (Step 2)</b>
	Federal	150	228	<b>Yes (Step 2)</b>
Annual PM <sub>10</sub>	State	20	26	<b>Yes (Step 2)</b>
24-hour PM <sub>2.5</sub>	Federal	35	49	<b>Yes (Step 2)</b>
Annual PM <sub>2.5</sub>	State	12	6	<b>No</b>
	Federal	12	8	<b>No</b>

<b>Step 2 – USEPA Significant Impact Level Basis</b>				
<b>Impact Parameter</b>	<b>Class II EILs</b>		<b>Project Construction</b>	
	<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed SIL?</b>
24-hour PM <sub>10</sub>	5	43	43	<b>Yes</b>
Annual PM <sub>10</sub>	1	2	2	<b>Yes</b>
24-hour PM <sub>2.5</sub>	5	7	7	<b>Yes</b>

NOTES: AAQS = Ambient Air Quality Standard, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, USEPA = U.S. Environmental Protection Agency, SIL = Significant Impact Level.  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
<sup>1</sup> Step 1 – the AAQS basis compares the background concentrations plus project contribution to the state and federal AAQS to determine if there would be an exceedance of the respective standard. For PM<sub>10</sub> and PM<sub>2.5</sub>, background concentrations already exceeded the applicable AAQS (except for annual state and federal PM<sub>2.5</sub> AAQS), so Step 2 – the SIL basis – compares the project contributions to levels determined by the SJVAPCD to cause or contribute to ambient air quality exceedances and impacts.  
SOURCE: Dudek, 2018

8

9 **Operation and Maintenance Emissions**

10 Operation and maintenance of Alternative A would result in the emissions of additional criteria air  
11 pollutants. Operation and maintenance emissions include long-term emissions that are related to  
12 project activities including operational (mobile) source emissions, area (heating, cooling, and  
13 structural) emissions, emissions from energy use and off-road vehicle and equipment emissions.  
14 **Table 3.3-9, Alternative A Estimated Maximum Operational Emissions**, presents the maximum  
15 daily and annual source emissions associated with operation (year 2022) of the project. Details of  
16 emissions calculations are provided in Appendix B2.

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**TABLE 3.3-9  
 ALTERNATIVE A ESTIMATED MAXIMUM OPERATIONAL EMISSIONS**

<b>Daily Emissions</b>						
<b>Source</b>	<b>Pollutants (pounds per day)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Area	1.11	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.11	1.48	1.21	0.01	0.32	0.09
Off-Road	0.71	6.81	6.92	0.01	0.46	0.42
<b>Total Daily Emissions</b>	<b>1.93</b>	<b>8.28</b>	<b>8.05</b>	<b>0.02</b>	<b>0.78</b>	<b>0.51</b>
<b>Annual Emissions</b>						
<b>Source</b>	<b>Pollutants (tons per year)</b>					
	<b>VOC (ROG)</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Area	0.20	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.20	0.27	0.20	0.00	0.06	0.02
Off-Road	0.00	0.04	0.04	0.00	0.00	0.00
<b>Total Annual Emissions</b>	<b>0.23</b>	<b>0.31</b>	<b>0.24</b>	<b>0.00</b>	<b>0.06</b>	<b>0.02</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
 These results include incorporation of tier 3 equipment and Rule 402 requirements.  
 SOURCE: Dudek, 2018

3

4 As shown in Table 3.3-9, off-road equipment used during maintenance and testing when operated  
 5 would be the primary source of daily criteria pollutant emissions. Mobile sources, including  
 6 employee commutes and maintenance vehicles would be the primary source of criteria air  
 7 pollutants annually. Based on the projected emissions, operation of Alternative A would not be  
 8 expected to result in an exceedance of a NAAQS or result in adverse effects on sensitive receptors.  
 9 In addition, Alternative A would not result in or contribute to a short-term exceedance of a state air  
 10 quality standard.

11 **Reduced-Visibility Impacts**

12 Operation of the solar power generation system would generate fugitive dust (PM<sub>10</sub>) emissions. The  
 13 primary source of fugitive PM<sub>10</sub> emissions would be from vehicular traffic on unpaved areas around  
 14 the solar panels. Secondary fugitive PM<sub>10</sub> emissions may also be generated around the installed  
 15 solar panels due to the shape and angle of the panels. PM<sub>10</sub> emissions in the form of fugitive dust  
 16 pose a potentially serious health hazard, alone or in combination with other pollutants. Compliance  
 17 with applicable EKAPCD rules and regulations and implementation of the Mitigation Measure MM  
 18 3.3-9a for the solar facility portion of the site identified in Section 3.3.5 would further reduce PM<sub>10</sub>  
 19 fugitive dust emissions to the extent feasible.

1 **General Conformity**

2 As stated in Section 3.3.2.2, the project area is designated as serious nonattainment of the federal  
3 8-hour ozone standard. The project would be subject to the general conformity regulations if its  
4 emissions would exceed the applicable *de minimis* levels. The applicable federal general  
5 conformity *de minimis* levels for the ozone precursors ROG and NO<sub>x</sub> are 50 tons per year and the  
6 *de minimis* level for PM<sub>10</sub> is 100 tons per year. Total annual emissions of ROG and NO<sub>x</sub> that would  
7 be generated during construction and operation of the project are presented above in Tables 3.3-6  
8 and 3.3-8. As indicated in these tables, the ROG, NO<sub>x</sub>, PM<sub>10</sub> emissions that would be generated by  
9 the project would not exceed the applicable General Conformity *de minimis* levels. Therefore,  
10 Alternative A would conform to the SIP and the Air Force would be exempt from performing a  
11 conformity determination. General Conformity would not be applicable to Alternative A.

12 **Decommissioning**

13 It is anticipated that the project would operate for 35 years and then be decommissioned. Assuming  
14 construction of the project could be completed as early as 2022, decommissioning would begin  
15 around 2067 and would occur over a period of approximately 3 calendar years. Given the trend of  
16 year over year declining emissions associated with the off-road construction equipment and on-  
17 road heavy truck fleets due to the phasing of existing regulation requirements, decommissioning  
18 would not be expected to result in a violation of a current national or state ambient air quality  
19 standard; however, due to the uncertainty of the air quality conditions and associated regulatory  
20 environment in 35 years, the specific effects on air quality related to decommissioning of the project  
21 at the time of the decommissioning cannot be assessed now with any certainty.

22 **CEQA: Impact Significance Determination**

23 **Impact 3.3-1: The project would conflict with or obstruct implementation of the applicable**  
24 **air quality plan.**

25 In general, a project would not interfere with the applicable air quality plan if it is consistent with  
26 growth assumptions used to form the applicable air quality plan and if the project implements all  
27 reasonably available and feasible air quality control measures. The consistency with the AQMP is  
28 discussed below for construction and operation.

29 Air quality impacts are controlled through policies and provisions of the EKAPCD, the Kern  
30 County General Plan, and the Kern County Code of Building Regulations. The CCAA requires air  
31 pollution control districts with severe or extreme air quality problems to provide for a 5 percent  
32 reduction in nonattainment emissions per year. Attainment Plans prepared for the EKAPCD comply  
33 with this requirement. CARB reviewers approve or amend the documents and forward the plans to  
34 the USEPA for final review and approval within the SIP.

1 **Required Evaluation Guidelines**

2 CEQA Guidelines and the CAA (Sections 176 and 316) contain specific references regarding the  
3 need to evaluate consistencies between the proposed project and the applicable AQMP for the  
4 proposed projects. To accomplish this, CARB has developed a three-step approach to determine  
5 project conformity with the applicable AQMP:

- 6 1. *Determination that an AQMP is being implemented in the area where the project is being*  
7 *proposed.* EKAPCD's most recently adopted air quality management plan is its Ozone Air  
8 *Quality Attainment Plan (AQAP) that is approved by CARB and USEPA.*
- 9 2. *The proposed project must be consistent with the growth assumptions of the applicable*  
10 *AQMP.* The proposed project, as a solar facility, would not introduce land uses that would  
11 generate vehicle trips or promote growth in the project area beyond what is projected in  
12 the Kern County General Plan and therefore incorporated into the AQAP.
- 13 3. *The project must contain in its design all reasonably available and feasible air quality*  
14 *control measures.* The proposed project incorporates various policy and rule-required  
15 implementation measures that would reduce related emissions.

16 Because implementation of the proposed project would not result in additional growth beyond what  
17 was anticipated by the Kern County General Plan and incorporated into the AQAP, conclusions  
18 may be drawn from the following criteria:

- 19 • That the findings of the analysis conducted using Traffic Analysis Zones (TAZ) show that  
20 sufficient employment increases are planned for the project area such that new employment  
21 opportunities afforded by the project were included in the growth assumption used to  
22 develop the AQAP.
- 23 • The primary source of emissions from the project would be from construction and  
24 operation vehicles that are licensed through the state and whose emissions are already  
25 incorporated into CARB's emissions inventory.

26 **Construction**

27 **Table 3.3-10**, *Alternative A Estimated Maximum Unmitigated Construction Emissions*, and **Table**  
28 **3.3-11**, *Alternative A Estimated Maximum Mitigated Construction Emissions*, presents the short-  
29 term construction emissions for Alternative A that are applicable to the CEQA review. In the  
30 unmitigated scenario, Table 3.3-10, short-term construction annual emissions exceed the EKAPCD  
31 significance thresholds for NOx and PM<sub>10</sub>. However, under the mitigated scenario, Table 3.3-11,  
32 emissions of NOx would be reduced to below the significance threshold while emissions of PM<sub>10</sub>  
33 would continue to exceed the threshold. Therefore, emissions for PM<sub>10</sub> would be significant and  
34 unavoidable.

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**TABLE 3.3-10  
ALTERNATIVE A ESTIMATED MAXIMUM UNMITIGATED CONSTRUCTION EMISSIONS**

Daily Emissions						
Construction Year	Pollutants (pounds per day)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	32.58	248.33	224.20	0.62	542.57	65.39
2021	32.38	252.76	229.97	0.67	476.92	58.90
2022	29.04	226.82	214.94	0.66	545.69	64.81
<b>Maximum Daily Emissions</b>	<b>32.58</b>	<b>252.76</b>	<b>229.97</b>	<b>0.67</b>	<b>545.69</b>	<b>65.39</b>
Annual Emissions						
Construction Year	Pollutants (tons per year)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	2.05	16.16	14.89	0.04	32.11	4
2021	3.78	30.51	28.30	0.08	55.77	7.06
2022	1.79	14.50	14.02	0.04	30.96	3.87
<b>Maximum Annual Emissions</b>	<b>3.78</b>	<b>30.51</b>	<b>28.30</b>	<b>0.08</b>	<b>55.77</b>	<b>7.06</b>
EKAPCD Significance Threshold	25	25	100	40	15	15
<b>Exceeds Level?</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
Refer to Appendix B2 for details regarding the construction emission estimates.  
SOURCE: Dudek, 2018

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4  
5

**TABLE 3.3-11  
ALTERNATIVE A ESTIMATED MAXIMUM MITIGATED CONSTRUCTION EMISSIONS**

Daily Emissions						
Construction Year	Pollutants (pounds per day)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	22.48	183.21	234.32	0.62	163.87	24.73
2021	22.47	193.51	242.98	0.67	146.72	23.48
2022	20.07	179.09	229.09	0.66	165.86	25.03
<b>Maximum Daily Emissions</b>	<b>22.48</b>	<b>193.51</b>	<b>242.98</b>	<b>0.67</b>	<b>165.86</b>	<b>25.03</b>
Annual Emissions						
Construction Year	Pollutants (tons per year)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	1.39	11.89	15.51	0.04	9.98	1.54
2021	2.57	23.31	29.82	0.08	17.57	2.83
2022	1.21	11.43	14.93	0.04	9.88	1.53
<b>Maximum Annual Emissions</b>	<b>2.57</b>	<b>23.31</b>	<b>29.82</b>	<b>0.08</b>	<b>17.57</b>	<b>2.83</b>
EKAPCD Significance Threshold	25	25	100	40	15	15
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
SOURCE: Dudek, 2018

1 Implementation of Mitigation Measures MM 3.3-1a through MM 3.3-8a for the solar facility  
2 portion of the project site and MM 3.3-1b through MM3.3-6b for the gen-tie portion of the site  
3 would ensure that all readily available and feasible air quality control measures would be  
4 implemented. These mitigation measures would reduce construction fugitive dust, equipment  
5 exhaust emissions, and indirect diesel-fueled commercial motor vehicle emissions, and would be  
6 implemented in conformance with the applicable EKACPD plans and regulations and Kern County  
7 General Plan Policies 20 and 21. Implementation of these measures would reduce NO<sub>x</sub> emissions  
8 to below the threshold, but would not reduce PM<sub>10</sub> emissions to below the threshold. Therefore,  
9 Alternative A would conflict with the AQAP and would result in a significant and unavoidable  
10 impact.

### 11 **Operation and Maintenance**

12 In general, a project would not interfere with the applicable air quality plan if it is consistent with  
13 growth assumptions used to form the applicable air quality plan. The land uses designated in the Kern  
14 County General Plan forms the basis for the growth assumptions in the air quality plans. Although  
15 the project would not be consistent with the existing land use designation in the current Kern County  
16 General Plan, it would not introduce a land use that would induce population or housing growth that  
17 could result in a substantial increase in vehicle miles traveled and associated criteria pollutant  
18 emissions. When compared against the current zoning of the project sites that would allow for the  
19 development of residential uses, the proposed solar facility would result in less operational emissions  
20 from mobile and area sources that would be generated. The only source of operational emissions  
21 associated with the project would be those generated from mobile sources traveling to and from the  
22 project area and some limited onsite use of off-road equipment. As shown in **Table 3.3-12**,  
23 *Alternative A Estimated Maximum Operational Emissions*, the project's long-term operational  
24 emissions would be well below EKAPCD's applicable significance thresholds. Compliance with  
25 applicable EKAPCD rules and regulations and implementation of Mitigation Measure MM 3.3-9a  
26 for the solar facility portion of the site identified in Section 3.3.5 would further reduce PM<sub>10</sub> fugitive  
27 dust emissions during operation to the extent feasible.

28 Furthermore, the solar power generation system of the project would also function to reduce the air  
29 pollutant emissions within the MDAB to the extent that the power generated is used to offset power  
30 production from fossil fueled power plants within (or contributory to) the MDAB. This power  
31 production is not projected within the existing air quality plans, and so the solar facility would  
32 further aid in reducing air pollutant emissions and increase the potential for attainment of the Ozone  
33 AQAP/SIP. Therefore, the project would not conflict with the EKAPCD's Ozone AQAP.

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**TABLE 3.3-12  
ALTERNATIVE A ESTIMATED MAXIMUM OPERATIONAL EMISSIONS**

<b>Daily Emissions</b>						
<b>Source</b>	<b>Pollutants (pounds per day)</b>					
	<b>VOC</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Area	1.11	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.11	1.48	1.21	0.01	0.32	0.09
Off-Road	0.71	6.81	6.92	0.01	0.46	0.42
<b>Total Daily Emissions</b>	<b>1.93</b>	<b>8.28</b>	<b>8.05</b>	<b>0.02</b>	<b>0.78</b>	<b>0.51</b>
<b>Annual Emissions</b>						
<b>Source</b>	<b>Pollutants (tons per year)</b>					
	<b>VOC</b>	<b>NOx</b>	<b>CO</b>	<b>SOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Area	0.20	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.20	0.27	0.20	0.00	0.06	0.02
Off-Road	0.00	0.04	0.04	0.00	0.00	0.00
<b>Total Annual Emissions</b>	<b>0.40</b>	<b>0.31</b>	<b>0.24</b>	<b>0.00</b>	<b>0.06</b>	<b>0.02</b>
EKAPCD Significant Threshold	25	25	100	40	15	15
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
SOURCE: Dudek, 2018

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4 **Decommissioning**

5 The project is anticipated to operate for approximately 35 years, after which the land would be  
6 converted to other uses in accordance with applicable land use regulations in effect at that time.  
7 The project would be required to develop a decommissioning financial plan for review and approval  
8 by the Kern County Planning and Natural Resources Department. All decommissioning and  
9 restoration activities would adhere to the requirements of the appropriate governing authorities and  
10 in accordance with all applicable federal, state, and county regulations. Given the trend of year over  
11 year declining emissions associated with the off-road construction equipment and on-road heavy  
12 truck fleets, decommissioning would not be expected to result in a violation of a current national  
13 or state ambient air quality standard; however, due to the uncertainty of the air quality conditions  
14 and associated regulatory environment in 35 years, the exact air quality impacts related to  
15 decommissioning of the project at the time of the decommissioning cannot be assessed with any  
16 certainty at that time.

17 **Mitigation Measures**

18 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
19 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
20 3.3.5 for mitigation measures).

1 **Level of Significance after Mitigation**

2 Short-term construction-related emissions would exceed the EKAPCD threshold for PM<sub>10</sub> and  
3 could potentially obstruct implementation of an applicable air quality plan. Construction impacts  
4 would be significant and unavoidable. Long-term operational impacts would be less than significant  
5 and would not obstruct implementation of an applicable air quality plan.

6 **Impact 3.3-2: The project would violate an applicable air quality standard as adopted in (c)i**  
7 **or (c)ii, or as established by EPA or air district or contribute substantially to an existing or**  
8 **project air quality violation.**

9 **Construction**

10 As shown in Table 3.3-10, impacts from the project would violate the applicable standard for  
11 construction-related NO<sub>x</sub> and PM<sub>10</sub>. After mitigation, Table 3.3-11 shows that only emissions for  
12 PM<sub>10</sub> during the third calendar year would exceed the EKAPCD thresholds, causing a significant  
13 and unavoidable impact.

14 **Reduced-Visibility Impacts**

15 As demonstrated in Table 3.3-8, PM<sub>10</sub> and PM<sub>2.5</sub> emissions would exceed the SIL level and could  
16 result in short-term significant and unavoidable impacts to visibility in a Class 1 area, even with  
17 incorporation of recommended Mitigation Measures MM 3.3-1a through MM 3.3-8a for the solar  
18 facility portion of the project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the site  
19 (see Section 3.3.5 for mitigation measures). Therefore, Alternative A could result in or contribute  
20 to a short-term exceedance of the state and federal PM<sub>10</sub> and PM<sub>2.5</sub> air quality standards resulting  
21 in significant and unavoidable impact resulting in reduced visibility in a Class 1 area.

22 **Operations**

23 Operational emissions would be limited to maintenance activities and vehicle travel by employees  
24 to the project site. Table 3.3-12 summarizes the estimated air pollutant emissions associated with  
25 operations and maintenance of the project. As shown in Table 3.3-12, operational emissions  
26 generated by the proposed project, with incorporation of mitigation measures, would not exceed  
27 the thresholds established by the EKAPCD and impacts would be less than significant.

28 Additionally, the operation of the solar facilities would also create renewable energy over the  
29 project's lifespan. This energy would displace the criteria pollutant emissions which would  
30 otherwise be produced by existing business-as-usual power generation resources (including natural  
31 gas, coal, and renewable combustion resources), which would further reduce project emissions.

32 **Reduced-Visibility Impacts**

33 Long-term project operations would not include activities or emission sources that would contribute  
34 to decreased visibility. Therefore, adherence to EKAPCD rules and regulations would result in less  
35 than significant impacts regarding fugitive dust and reduced visibility. Implementation of  
36 Mitigation Measure MM 3.3-9a for the solar facility portion of the site, identified in Section 3.3.5,  
37 would further reduce PM<sub>10</sub> fugitive dust emissions during operation to the extent feasible.

1 **Mitigation Measures**

2 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
3 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
4 3.3.5 for mitigation measures).

5 **Level of Significance after Mitigation**

6 Short-term construction-related impacts would be significant and unavoidable. Long-term  
7 operational impacts would be less than significant.

8 **Impact 3.3-3: Construction and operation of the project would result in a cumulatively**  
9 **considerable net increase of a criteria pollutant for which the project region (EKAPCD) is**  
10 **nonattainment under applicable federal or state ambient air quality standards (including**  
11 **releasing emissions that exceed quantitative thresholds for ozone precursors).**

12 **Cumulative Construction**

13 The proposed project is located within the Kern County portion of the MDAB, in an area that is  
14 designated as nonattainment for federal and state ozone and state PM<sub>10</sub> standards and is under the  
15 jurisdiction of the EKAPCD. The EKAPCD's approach for assessing cumulative impacts is based  
16 on the forecasts of attainment and ambient air quality standards in accordance with requirements  
17 of the federal and state clean air acts. Thus, emissions associated with the project would be  
18 cumulatively significant if, with mitigation, there remains an increase above the significance  
19 threshold of a pollutant for which the MDAB is classified as a nonattainment area (i.e., ozone and  
20 PM<sub>10</sub>). With respect to determining the significance of a project's contribution to regional  
21 emissions, Kern County, in its *Guidelines for Preparing an Air Quality Assessment for Use in*  
22 *Environmental Impact Reports* document, states that projects that produce emissions that exceed  
23 the adopted thresholds of the EKAPCD for ROG, NO<sub>x</sub>, and PM<sub>10</sub> shall be considered significant  
24 for a project level and/or cumulatively for impacts to air quality. Thus, based on Kern County's  
25 guidance, if an individual project results in air emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub> that exceed the  
26 EKAPCD's thresholds for project-specific impacts, then it would also result in a cumulatively  
27 considerable net increase of these pollutants for which the project region is in nonattainment under  
28 an applicable federal or state ambient air quality standard.

29 As project construction would result in emissions of ozone precursors (ROGs and NO<sub>x</sub>) and PM<sub>10</sub>,  
30 and could result in cumulative net increase in these pollutants, impacts of project construction  
31 emissions could be cumulatively significant. After mitigation, the project's construction emissions  
32 would exceed the EKAPCD annual threshold for PM<sub>10</sub>. However, as construction activities are  
33 temporary and would cease upon completion, construction of the project would not cumulatively  
34 contribute on a long-term basis to the air pollution problems in the MDAB. In addition, the County  
35 requires that cumulative emissions from all projects within a 6-mile radius be analyzed in the  
36 cumulative scenario. There are a number of projects that are located in the vicinity of the proposed  
37 project, many of which are also alternative energy (wind and solar) projects. If these projects were  
38 constructed at the same time as the project, they would contribute to the current nonattainment  
39 status of ozone and PM<sub>10</sub> within the MDAB, and the impact of the proposed project would be  
40 cumulatively considerable.

1 There are a number of projects within a 6-mile radius that have the potential for overlapping  
2 construction schedules, the associated emissions of NO<sub>x</sub> and PM<sub>10</sub>, when cumulatively considered,  
3 could be above the respective significance thresholds and therefore could result in significant  
4 impacts related to the generation of fugitive dust, particulate matter exhaust, and ozone precursors.).  
5 However, given the project exceeds EKAPCD standard for construction-related PM<sub>10</sub> emissions,  
6 and the potential for cumulatively considerable impacts associated with construction-related NO<sub>x</sub>,  
7 construction of the project would result in a significant and unavoidable cumulative impact.

#### 8 Construction Health Impacts from Regional Emissions (Friant Ranch Case)

9 The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon  
10 the size and distribution of emission sources in the region and meteorological factors such as wind,  
11 sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. As expressed in  
12 the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*)  
13 (SJVAPCD, 2014), the air districts established and recommend CEQA air quality analysis of  
14 criteria air pollutants use significance thresholds that were set at emission levels tied to the region's  
15 attainment status, based on emission levels at which stationary pollution sources permitted by the  
16 air district must offset their emissions. Such offset levels allow for growth while keeping the  
17 cumulative effects of new sources at a level that will not impede attainment of the NAAQS. The  
18 health risks associated with exposure to criteria pollutants are evaluated on a regional level, based  
19 on the region's attainment of the NAAQS. The mass emissions significance thresholds used in  
20 CEQA air quality analysis are not intended to be indicative of human health impacts that a project  
21 may have (SCAQMD, 2014; SJVAPCD, 2014). Therefore, the project's exceedance of the mass  
22 regional emissions threshold (i.e., project construction PM<sub>10</sub> exceedance) from project-related  
23 activities does not necessarily indicate that the project would cause or contribute to the exposure of  
24 sensitive receptors to ground-level concentrations in excess of health-protective levels.

25 As discussed earlier and shown in Table 3.3-1, the southeastern portion of the County, where the  
26 project site is located, is currently classified as nonattainment for the federal and state ozone and  
27 state PM<sub>10</sub> standards, and as attainment and/or unclassified for all of the other criteria pollutant  
28 standards (EKAPCD 2017; USEPA 2015). Although ozone would not be directly emitted by  
29 construction equipment for the proposed project, the ozone precursors ROG and NO<sub>x</sub> would be  
30 emitted, as well as, the other criteria pollutants of CO, SO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. Given that ozone  
31 formation occurs through a complex photo-chemical reaction between NO<sub>x</sub> and ROG in the  
32 atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-  
33 wide or regional basis and not on a localized basis.

34 The health-based ambient air quality standards for ozone are established as concentrations of ozone  
35 and not as tonnages of their precursor pollutants (i.e., NO<sub>x</sub> and ROG). It is not necessarily the  
36 tonnage of precursor pollutants that causes human health effects, but the concentration of resulting  
37 ozone or PM. Because of the complexity of ozone formation and the non-linear relationship of  
38 ozone concentration with its precursor gases, and given the state of environmental science modeling  
39 in use at this time, it is not practical to determine whether, or the extent to which, a single project's  
40 precursor (i.e., NO<sub>x</sub> and ROG) emissions would potentially result in the formation of secondary  
41 ground-level ozone and the geographic and temporal distribution of such secondary formed  
42 emissions. Meteorology, the presence of sunlight, seasonal impacts, and other complex

1 photochemical factors all combine to determine the ultimate concentration and location of ozone  
2 (SCAQMD 2014; SJVAPCD 2014). Running the regional-scale photochemical grid model used  
3 for predicting ozone attainment with the emissions from any individual project can be done, but it  
4 would not yield reliable information regarding a measurable increase in ozone concentrations  
5 sufficient to accurately quantify ozone-related health effects. Similarly, it would also not be  
6 feasible to identify a project's impact on the days of nonattainment per year. Furthermore, available  
7 models today are designed to determine regional, population-wide health impacts, and cannot  
8 accurately quantify ozone-related health impacts caused by ROG or NO<sub>x</sub> emissions from a local  
9 level (an individual project). Notwithstanding this scientific constraint, CEQA air quality analyses  
10 have been using project-level mass-emission thresholds for ozone precursors (NO<sub>x</sub> and ROG), PM,  
11 and other criteria pollutants, and the disconnect between project-level emissions and project-level  
12 health impact cannot be bridged at this time. Based on this information, a general description of the  
13 adverse health effects resulting from the project-level criteria pollutants, which is discussed  
14 previously, is all that can be feasibly provided at this time.

15 With respect to emissions of the criteria pollutants of ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, and PM<sub>2.5</sub>, project  
16 construction emissions would not exceed the EKAPCD significance thresholds, and would be  
17 substantially below by an order of magnitude or more; thus, it is not expected that project  
18 construction emissions would result in a substantial increase in criteria pollutant concentrations,  
19 and their related health effects in the air basin and impacts would be less than significant.

## 20 **Cumulative Operations**

21 The project would not result in significant operational emissions of criteria pollutants. Operation  
22 of the project would result in a positive long-term cumulative benefit related to air quality in the  
23 region because it would introduce a non-fossil-fuel-based energy generation. The renewable energy  
24 created by the project would also displace the criteria pollutant emissions that would otherwise  
25 result from the existing fossil-fuel-powered generation sources. Thus, operation of the project  
26 would result in an overall long-term net reduction of emissions by providing electricity that would  
27 displace energy produced from fossil fuel combustion. Alternative A would provide a potential  
28 reduction of 656,752 metric tons of carbon dioxide equivalent emissions (MT CO<sub>2e</sub>) per year if the  
29 renewable electricity generated by the project were to be used instead of electricity generated by  
30 fossil-fuel sources<sup>5</sup>. Therefore, the project's operational emissions would not be cumulatively  
31 considerable, and the associated cumulative impact would be less than significant.

32 Furthermore, a project's contribution to cumulative impacts can also be evaluated by considering  
33 whether the project has been included in the air quality transportation conformity modeling  
34 conducted for Kern County. Air quality transportation conformity is a process whereby  
35 transportation plans, programs, and projects are evaluated to determine whether they conform to  
36 requirements of the 1990 federal CAA Amendments and the applicable SIP. Typically, this analysis  
37 is performed for large-scale transportation and development projects that substantially increase the  
38 number of vehicle trips in an area on a long-term basis. The project would only generate a  
39 substantial number of trips during the short-term construction phase, and only a minimal number  
40 of trips during the operations phase for the 10 part-time operational employees. The project would

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<sup>5</sup> See Section 3.8, *Greenhouse Gas Emissions*, for more information on energy reduction from the project.

1 not add housing or employment in excess of the projections included in the Kern County  
2 transportation conformity analysis. The project operations would involve minimal new trips during  
3 the operations phase and would not alter traffic patterns in the project area. New trips generated  
4 during the construction phase would be for a short-term, temporary duration. Therefore, the project  
5 would be considered consistent with the most recent Kern County transportation conformity  
6 analysis and would not involve cumulative air quality impacts associated with transportation or  
7 growth that have not already been included in a conformity analysis.

#### 8 Operation Localized Health Impacts from Regional Emissions (Friant Ranch Case)

9 Regulatory agencies have been evaluating impacts of criterial pollutants emissions from a regional  
10 level, and today's environmental models are designed to support such regional analysis. As  
11 discussed previously, converting project-level criteria pollutants' air quality impact to a resulting  
12 human health impact is not practical with today's environmental science models. While operation  
13 of the project would emit ozone precursor emissions of ROG and NO<sub>x</sub>, because of the complexity  
14 of ozone formation and the non-linear relationship of ozone concentration with its precursor gases,  
15 and given the state of environmental science modeling in use at this time, it is infeasible to  
16 meaningfully convert specific project emissions levels of NO<sub>x</sub> or ROG emitted in a particular area  
17 to a particular concentration of ozone and resulting human health impact in that area. The same is  
18 true for secondary PM, which like ozone, is formed via complex chemical reactions in the  
19 atmosphere between precursor chemicals such as sulfur dioxides and NO<sub>x</sub>. Therefore, a general  
20 description of the adverse health effects resulting from the project-level criteria pollutants is all that  
21 can be feasibly provided at this time.

22 With respect to emissions of the criteria pollutants of ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>,  
23 project operation would not exceed the EKAPCD significance thresholds, and would be  
24 substantially below by an order of magnitude or more; thus, it is not expected that project  
25 operational emissions would result in a substantial increase in criteria pollutant concentrations and  
26 their related health effects in the air basin and impacts would be less than significant.

#### 27 **Cumulative Toxic Air Contaminants**

28 Combined TACs emission impacts from the project and other existing and planned projects are  
29 considered cumulatively significant when air quality standards are exceeded. Since the project  
30 would not be a significant source of TACs, it is not expected to pose a significant cumulative TAC  
31 impact. Since the majority of the projects are also solar plants, TACs would not be considered a  
32 significant impact for those projects either. Therefore, TACs impacts would not be cumulatively  
33 considerable and impacts would be less than significant.

#### 34 **Cumulative Carbon Monoxide – Mobile Sources**

35 Traffic increases and added congestion caused by a project can combine to cause a CO "Hotspot".  
36 There was no traffic study available for this project at the time this analysis was completed.  
37 However, no vehicular traffic other than sporadic maintenance, panel washing trucks, and  
38 employees are expected and due to the location of the site, potentially impacted intersections and  
39 roadway segments are anticipated to operate at a level of service (LOS) of C or better during project  
40 operations. Therefore, cumulative CO "Hotspot" Modeling was not conducted for this Project and  
41 no concentrated excessive CO emissions are expected to be caused once the project is completed.

1 Additionally, as the majority of the other projects are also solar plants, traffic would be minimal  
2 and would not result in CO “Hotspots”. Therefore, CO impacts would not be cumulatively  
3 considerable and impacts would be less than significant.

4 **Mitigation Measures**

5 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
6 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
7 3.3.5 for mitigation measures).

8 **Level of Significance after Mitigation**

9 Cumulative construction impacts would be significant and unavoidable. Operational impacts would  
10 not be cumulatively considerable. TAC and CO impacts would not be cumulatively considerable.

11 **Impact 3.3-4: Construction and operation of the project would expose sensitive receptors to**  
12 **substantial pollutant concentrations.**

13 **Toxic Air Contaminants**

14 **Construction**

15 A construction HRA was conducted for the project and is included in Appendix B3. As shown in  
16 **Table 3.3-13, *Alternative A Construction Related Health Risk Assessment***, the maximally exposed  
17 individual residence (MEIR) would be located directly north of the project boundary along Trotter  
18 Avenue. Potential health risks at the MEIR resulting from construction activities are shown in Table  
19 3.3-13.

20 As depicted in Table 3.3-13, unmitigated project construction would emit TACs that would result  
21 in a cancer risk and chronic HI at the MEIR below the EKAPCD thresholds of 10 in a million and  
22 1, respectively. Mitigation would include Tier 3 engines for off-road equipment, which would  
23 reduce the DPM and health risk further. Overall, sensitive receptors would not be exposed to  
24 substantial TACs due to project construction emissions and impacts would be less than significant.

25 **Operations**

26 Based on the operational HRA results, the MEIR would be located directly north of the project  
27 boundary along Trotter Avenue. The potential health risks at the MERI resulting from operational  
28 activities are shown in **Table 3.3-14.**

29 As shown on Table 3.3-14, project operations would emit TACs that would result in cancer risk  
30 and chronic HI at the MEIR which are below the EKAPCD thresholds. Therefore, impacts  
31 associated with the project’s potential to expose sensitive receptors to substantial TACs due to  
32 project operational emissions would be less than significant.

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**TABLE 3.3-13  
ALTERNATIVE A CONSTRUCTION HEALTH RISK ASSESSMENT**

Receptor	Cancer Risk (per Million)	Chronic Hazard Index
<b>Unmitigated</b>		
MEIR	6.5	0.004

EKAPCD Significance Criteria	10	1
<b>Exceed Threshold?</b>	<b>NO</b>	<b>NO</b>
<b>Mitigated</b>		
MEIR	4.2	0.003
EKAPCD Significance Criteria	10	1
<b>Exceed Threshold?</b>	<b>NO</b>	<b>NO</b>

NOTES: MEIR = Maximally Exposed Individual Resident  
 DPM exposure at receptors was modeled with AERMOD, the results of which were then input into HARP 2 to generate health risk estimates. For the MEIR, exposure was assumed to begin during the third trimester of pregnancy for a duration of 8 hours per day, 5 days per week, for 24 months to account for the short-term construction activity duration. The Mitigated scenario includes Tier 3 engines for off-road equipment.  
 SOURCE: Dudek, 2018a

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**TABLE 3.3-14  
 ALTERNATIVE A OPERATIONAL HEALTH RISK ASSESSMENT**

Receptor	Cancer Risk (per Million)	Chronic Hazard Index
<b>Unmitigated</b>		
MEIR	0.09	0.00002
EKAPCD Significance Criteria	10	1
<b>Exceed Threshold?</b>	<b>NO</b>	<b>NO</b>

NOTES: MEIR = Maximally Exposed Individual Resident  
 DPM exposure at receptors was modeled with AERMOD, the results of which were then input into HARP 2 to generate health risk estimates. For the MEIR, exposure was assumed to begin during the third trimester of pregnancy for a duration of 8 hours per day, 12 days per year, for 30 years to account for the long-term operational activity duration.  
 SOURCE: Dudek, 2018a

4

**CO Hotspots**

A CO “Hotspot” can occur when vehicles are idling at highly congested intersections. CO hotspots can adversely affect nearby sensitive receptors. The Kern County Planning Department’s *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (2006) states that CO hotspots must be analyzed when one of the following conditions occur: (a) a project increases traffic at an intersection or roadway that operates at a level of service LOS E or worse; (b) a project involves adding signalization and/or channelization to an intersection; or (c) sensitive receptors such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or signalization.

The majority of project-related traffic would occur during the construction phase. As indicated in Table 3.15-4 (see Section 3.15, *Transportation*), potentially impacted intersections in the project area would operate at LOS of B or better during construction of Alternative A. Therefore, CO “Hotspot” modeling was not conducted for the action alternatives because the project would not result in highly congested intersections. There would be a less-than-significant CO hotspot impact associated with construction of the project.

19

1 **Valley Fever**

2 The project has the potential to generate substantial amounts of fugitive dust and suspend Valley  
3 Fever spores with the dust that could then reach nearby sensitive receptors. During project  
4 construction, it is possible that onsite workers could be exposed to spores that cause Valley Fever  
5 from fugitive dust generated during construction, which is a potentially significant impact. There  
6 is the potential that cocci spores would be stirred up during excavation, grading, and earth-moving  
7 activities, exposing construction workers and nearby sensitive receptors to these spores and to the  
8 potential of contracting Valley Fever. However, with implementation of Mitigation Measures MM  
9 3.3-10a for the solar facility portion of the project site and MM 3.3-7b and MM 3.3-8b for the gen-  
10 tie portion of the project site, the exposure to spores that cause Valley Fever would be minimized.  
11 With implementation of this mitigation measure, dust generated from construction of the project  
12 would not add significantly to the existing exposure level of people to this fungus, including  
13 construction workers, and impacts would be reduced to a less-than-significant level.

14 **Asbestos**

15 Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock  
16 is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air  
17 quality and human health hazards. These rocks have been commonly used for unpaved gravel roads,  
18 landscaping, fill projects, and other improvement projects in some localities. Asbestos may be  
19 released to the atmosphere due to vehicular traffic on unpaved roads, during grading for  
20 development projects, and at quarry operations.

21 Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These  
22 rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the  
23 Klamath Mountains, and Coast Ranges. However, project site is not located in an area where  
24 naturally occurring asbestos is likely to be present (CDCDMG, 2000). Therefore, impacts  
25 associated with exposure of construction workers and nearby sensitive receptors to asbestos would  
26 be less than significant.

27 **Mitigation Measures**

28 Implement Mitigation Measure MM 3.3-10a for the solar facility portion of the project site and  
29 MM 3.3-7b and MM 3.3-8b for the gen-tie portion of the site (see Section 3.3.5 for mitigation  
30 measure).

31 **Level of Significance after Mitigation**

32 Impacts would be less than significant.

33 **3.3.3.2 Alternative B: 1,500-Acre EUL**

34 ***NEPA: General Conformity Analysis***

35 **Construction**

36 Implementation of Alternative B includes the construction of a solar facility on 1,500 acres of land  
37 located within the same site as Alternative A. It is estimated that the construction duration for  
38 Alternative B would be approximately 9 months, which would be 15 months less than Alternative  
39 A due to the reduced size of the facility. Alternative B is a 62.5 percent reduction in area as

1 compared to Alternative A (i.e., 1,500 acres compared to 4,000 acres equals a 62.5 percent  
 2 reduction). Alternative B would utilize the same gen-tie line route proposed for Alternative A.  
 3 Unmitigated and mitigated construction emissions by calendar year estimated for Alternative B are  
 4 described in **Table 3.3-15, Alternative B Estimated Maximum Unmitigated Construction**  
 5 **Emissions**, and **Table 3.3-16, Alternative B Estimated Maximum Mitigated Construction**  
 6 **Emissions**, respectively.

7 Daily and annual unmitigated construction emissions by calendar year were estimated for Alternative  
 8 B and are described in Table 3.3-15. Emissions from Alternative A were generally reduced by 62.5  
 9 percent to determine emissions for Alternative B. However, for construction emissions of Alternative  
 10 B, as each construction year is 6 months long, Alternative A emissions for 2020 were used for 2020  
 11 and Alternative A emissions for 2022 were used for 2021 as each of those was a half a year (those  
 12 emissions were not reduced by 62.5 percent). As shown in Table 3.3-15, annual construction  
 13 unmitigated emissions would not exceed *de minimis* levels and the project would not result in an  
 14 exceedance of the NAAQS.

15 Table 3.3-16 shows the resulting maximum daily and annual emissions with incorporated project  
 16 reduction design features, which includes use of tier 3 equipment and compliance with Rule 402,  
 17 specifically limiting off-road vehicle speed to 15 miles per hour and watering twice daily. As  
 18 described above for unmitigated construction emissions for Alternative B, as each construction year  
 19 is 6 months long, Alternative A emissions for 2020 were used for 2020 and Alternative A emissions  
 20 for 2022 were used for 2021 as each of those was a half a year (those emissions were not reduced  
 21 by 62.5 percent). As shown in the table, maximum daily and annual emissions of VOC, NO<sub>x</sub>, PM<sub>10</sub>  
 22 and PM<sub>2.5</sub> were reduced compared to the unmitigated emissions in Table 3.3-15. As shown in  
 23 Table 3.3-16, annual mitigated construction emissions would not exceed *de minimis* levels and the  
 24 project would not result in an exceedance of the NAAQS. Alternative B has the same impact as  
 25 Alternative A, although the amount of emissions is reduced.

26  
 27

**TABLE 3.3-15**  
**ALTERNATIVE B ESTIMATED MAXIMUM UNMITIGATED CONSTRUCTION EMISSIONS**

Annual Emissions	Pollutants (tons per year)					
	VOC (ROG)	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Construction Year						
2020	0.92	6.83	6.31	0.02	12.08	1.54
2021	0.78	6.33	6.13	0.01	11.87	1.50
<b>Maximum Annual Emissions</b>	<b>0.92</b>	<b>0.83</b>	<b>6.31</b>	<b>0.02</b>	<b>12.08</b>	<b>1.54</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NO<sub>x</sub> = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SO<sub>x</sub> = sulfur oxides, VOC = volatile organic compounds (ROG). Refer to Appendix B2 for details regarding the construction emission estimates. SOURCE: ESA 2019

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**TABLE 3.3-16  
ALTERNATIVE B ESTIMATED MAXIMUM MITIGATED CONSTRUCTION EMISSIONS**

Construction Year	Pollutants (tons per year)					
	VOC (ROG)	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	0.58	5.05	6.62	0.02	3.77	0.61
2021	0.53	5.01	6.55	0.01	3.78	1.45
<b>Maximum Annual Emissions</b>	<b>0.58</b>	<b>5.05</b>	<b>6.62</b>	<b>0.02</b>	<b>3.78</b>	<b>1.45</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
SOURCE: ESA 2019

3

4 **Reduced-Visibility Impacts**

5 Visibility at offsite locations may be impacted by emissions of airborne PM from short-term  
6 construction activities. Federally designated Class I areas are of particular concern. These include  
7 many wilderness areas and national parks. In addition, military aircraft use areas within the Upper  
8 Mojave Desert region, such as Edwards Air Force Base, Fort Irwin, China Lake Naval Weapons  
9 Station, and the R-2508 Airspace Complex are also sensitive to reduced visibility from airborne  
10 PM. Visibility impact analyses are intended for stationary sources of emissions which are subject  
11 to the PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources.  
12 However, because the project would increase PM<sub>10</sub> emissions, a construction AAQA was  
13 conducted to see how project emissions would impact the Class I area.

14 To estimate AAQA emissions for Alternative B, the maximum unmitigated concentrations from  
15 Alternative A were reduced by 62.5 percent and added to the background levels and then compared  
16 to the AAQS. **Table 3.3-17, *Alternative B Unmitigated Construction Ambient Air Quality Impact***  
17 ***Assessment Results***, presents a summary of the two-step process taken to determine whether  
18 construction activities associated with the project would cause or contribute to ambient air quality  
19 impacts.

20 As shown in Table 3.3-17, Alternative B would result in construction activities that could generate  
21 ambient concentration of PM<sub>10</sub> above the applicable 24-hour and annual PM<sub>10</sub> AAQS and the 24-  
22 hour PM<sub>2.5</sub> AAQS. Alternative B has the same impacts as Alternative A, but generates less  
23 emissions. However, it would still result in a short-term unavoidable adverse impact.

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**Table 3.3-17**  
**ALTERNATIVE B UNMITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS<sup>1</sup>**

<b>Step 1 – Ambient Air Quality Standard Basis</b>				
<b>Impact Parameter</b>	<b>Applicable Standard</b>	<b>AAQS</b>	<b>Maximum Concentration: Project = Background Levels</b>	
		<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed AAQS?</b>
24-hour PM <sub>10</sub>	State	50	224	<b>Yes (Step 2)</b>
	Federal	150	237	<b>Yes (Step 2)</b>
Annual PM <sub>10</sub>	State	20	26	<b>Yes (Step 2)</b>
24-hour PM <sub>2.5</sub>	Federal	35	48	<b>Yes (Step 2)</b>
Annual PM <sub>2.5</sub>	State	12	6	<b>No</b>
	Federal	12	8	<b>No</b>

<b>Step 2 – USEPA Significant Impact Level Basis</b>			
<b>Impact Parameter</b>	<b>Class II EILs</b>		<b>Project Construction</b>
	<b>µg/m<sup>3</sup></b>	<b>µg/m<sup>3</sup></b>	<b>Exceed SIL?</b>
24-hour PM <sub>10</sub>	5	53	<b>Yes</b>
Annual PM <sub>10</sub>	1	3	<b>Yes</b>
24-hour PM <sub>2.5</sub>	5	6	<b>Yes</b>

NOTES: AAQS = Ambient Air Quality Standard, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, USEPA = U.S. Environmental Protection Agency, SIL = Significant Impact Level.

<sup>1</sup> Step 1 – the AAQS basis compares the background concentrations plus project contribution to the state and federal AAQS to determine if there would be an exceedance of the respective standard. For PM<sub>10</sub> and PM<sub>2.5</sub>, background concentrations already exceeded the applicable AAQS (except for annual state and federal PM<sub>2.5</sub> AAQS), so Step 2 – the SIL basis – compares the project contributions to levels determined by the SJVAPCD to cause or contribute to ambient air quality exceedances and impacts.

SOURCE: ESA, 2019

3

4 To estimate AAQA emissions for Alternative B, the maximum mitigated concentrations from  
 5 Alternative A were reduced by 62.5 percent and added to the background levels and then compared  
 6 to the AAQS. **Table 3.3-18, *Alternative B Mitigated Construction Ambient Air Quality Impact***  
 7 ***Assessment Results***, presents a summary of the two-step process taken to determine whether  
 8 construction activities associated with the project would cause or contribute to ambient air quality  
 9 impacts.

10 Table 3.3-18 presents the mitigated construction AAQA. As shown in Table 3.3-18, PM<sub>10</sub>  
 11 emissions would exceed the SIL 24-hour PM<sub>10</sub> level and could result in short-term unavoidable  
 12 adverse impacts to visibility in a Class 1 area, even with incorporation of recommended Mitigation  
 13 Measures MM 3.3-1a through MM 3.3-8a for the solar facility portion of the project site and MM  
 14 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section 3.3.5 for mitigation  
 15 measures). Therefore, Alternative B could result in or contribute to a short-term exceedance of the  
 16 24-hour state PM<sub>10</sub> AAQS, similar to Alternative A.

1  
2

**TABLE 3.3-18  
ALTERNATIVE B MITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS**

**Step 1<sup>1</sup> – Ambient Air Quality Standard Basis**

Impact Parameter	Applicable Standard	AAQS	Maximum Concentration: Project = Background Levels	
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	Exceed AAQS?
24-hour PM <sub>10</sub>	State	50	187	<b>Yes (Step 2)</b>
	Federal	150	200	<b>Yes (Step 2)</b>
Annual PM <sub>10</sub>	State	20	19	<b>No</b>
24-hour PM <sub>2.5</sub>	Federal	35	44	<b>Yes (Step 2)</b>
Annual PM <sub>2.5</sub>	State	12	6	<b>No</b>
	Federal	12	8	<b>No</b>

**Step 2 – USEPA Significant Impact Level Basis**

Impact Parameter	Class II EILs	Project Construction	
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	Exceed SIL?
24-hour PM <sub>10</sub>	5	18	<b>Yes</b>
24-hour PM <sub>2.5</sub>	5	2	<b>No</b>

NOTES: AAQS = Ambient Air Quality Standard, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, USEPA = U.S. Environmental Protection Agency, SIL = Significant Impact Level.  
These results include incorporation of tier 3 equipment and Rule 402 requirements.  
<sup>1</sup> Step 1 – the AAQS basis compares the background concentrations plus project contribution to the state and federal AAQS to determine if there would be an exceedance of the respective standard. For PM<sub>10</sub> and PM<sub>2.5</sub>, background concentrations already exceeded the applicable AAQS (except for annual state and federal PM<sub>2.5</sub> AAQS), so Step 2 – the SIL basis – compares the project contributions to levels determined by the SJVAPCD to cause or contribute to ambient air quality exceedances and impacts.  
SOURCE: ESA, 2019

3

**Operation and Maintenance Emissions**

Operation and maintenance of Alternative B would result in the emissions of additional criteria air pollutants. Operation and maintenance emissions include long-term emissions that are related to project activities, including operational (mobile) source emissions, area (heating, cooling, and structural) emissions, emissions from energy use, and off-road vehicle and equipment emissions. **Table 3.3-19, Alternative B Estimated Maximum Operational Emissions**, presents the maximum daily and annual source emissions associated with operation (year 2021) of the project. Alternative B operational emissions were estimated using Alternative A operational emissions and reducing them by 62.5 percent.

As shown in Table 3.3-19, off-road equipment used during maintenance and testing when operated would be the primary source of daily criteria pollutant emissions. Mobile sources, including employee commutes and maintenance vehicles would be the primary source of criteria air pollutants annually. Based on the projected emissions, operation of Alternative B would not be expected to result in an exceedance of a NAAQS or result in adverse effects on sensitive receptors. In addition, Alternative B would not result in or contribute to a short-term exceedance of a state air quality standard, similar to Alternative A.

1  
2

**TABLE 3.3-19  
 ALTERNATIVE B ESTIMATED MAXIMUM OPERATIONAL EMISSIONS**

Source	Pollutants (tons per year)					
	VOC (ROG)	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	0.08	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.08	0.10	0.08	0.00	0.02	0.01
Off-Road	0.00	0.02	0.02	0.00	0.00	0.00
<b>Total Annual Emissions</b>	<b>0.16</b>	<b>0.12</b>	<b>0.10</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>
General Conformity <i>De Minimis</i> Level	50	50	100	100	100	100
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
 These results include incorporation of tier 3 equipment and Rule 402 requirements.  
 SOURCE: ESA, 2019

3

4 **Reduced-Visibility Impacts**

5 Operation of the solar power generation system would generate fugitive dust (PM<sub>10</sub>) emissions. The  
 6 primary source of fugitive PM<sub>10</sub> emissions would be from vehicular traffic on unpaved areas around  
 7 the solar panels. Secondary fugitive PM<sub>10</sub> emissions may also be generated around the installed  
 8 solar panels due to the shape and angle of the panels. PM<sub>10</sub> emissions in the form of fugitive dust  
 9 pose a potentially serious health hazard, alone or in combination with other pollutants. Compliance  
 10 with applicable EKAPCD rules and regulations, local zoning codes, and implementation of  
 11 Mitigation Measure MM 3.3-9a for the solar facility portion of the project site, identified in Section  
 12 3.3.5, would further reduce PM<sub>10</sub> fugitive dust emissions during operation to the extent feasible,  
 13 similar to Alternative A.

14 **Decommissioning**

15 Decommissioning of the project under Alternative B would not rise above existing USEPA General  
 16 Conformity thresholds. Like project emissions from construction and operation and maintenance,  
 17 no pollutants generated from decommissioning activities would exceed the applicable USEPA  
 18 General Conformity thresholds.

19 **General Conformity**

20 As stated in Section 3.3.2.2, the project area is designated as serious nonattainment of the federal  
 21 8-hour ozone standard. The project would be subject to the general conformity regulations if its  
 22 emissions would exceed the applicable *de minimis* levels. The applicable federal general  
 23 conformity *de minimis* levels for the ozone precursors ROG and NOx 50 tons per year and the *de*  
 24 *minimis* level for PM<sub>10</sub> is 100 tons per year. Total annual emissions of ROG and NOx that would  
 25 be generated during construction and operation of the Alternative B are presented above in Tables  
 26 3.3-16 and 3.3-18. As indicated in these tables, the ROG, NOx, PM<sub>10</sub> emissions that would be  
 27 generated by the project would not exceed the applicable General Conformity *de minimis* levels.

1 Therefore, Alternative B would conform to the SIP and the Air Force would be exempt from  
2 performing a conformity determination. General Conformity would not be applicable to Alternative  
3 B.

4 **CEQA: Impact Significance Determination**

5 **Construction**

6 **Table 3.3-20**, *Alternative B Estimated Maximum Unmitigated Construction Emissions*, and **Table**  
7 **3.3-21**, *Alternative B Estimated Maximum Mitigated Construction Emissions*, present the short-  
8 term construction emissions estimated for Alternative B. To estimate construction emissions for  
9 Alternative B, the 6-month construction years for Alternative A, 2020 for 2020 and 2022 for 2021,  
10 were used as the emissions for construction of Alternative B (those emissions were not reduced by  
11 62.5 percent). Neither the unmitigated nor the mitigated scenarios (Tables 3.3-20 and 3.3-21) would  
12 exceed the EKAPCD significance thresholds for all criteria air pollutants. Unlike Alternative A,  
13 Alternative B would not result in significant and unavoidable impacts as it would not conflict with  
14 the AQMP. Therefore, construction impacts would be less than significant for Alternative B.

15 **TABLE 3.3-20**  
16 **ALTERNATIVE B ESTIMATED MAXIMUM UNMITIGATED CONSTRUCTION EMISSIONS**

Annual Emissions						
Construction Year	Pollutants (tons per year)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	0.92	6.83	6.31	0.02	12.08	1.54
2021	0.78	6.33	6.13	0.01	11.87	1.50
<b>Maximum Annual Emissions</b>	<b>0.92</b>	<b>6.83</b>	<b>6.31</b>	<b>0.02</b>	<b>12.08</b>	<b>1.54</b>
EKAPCD Significance Threshold	25	25	100	40	15	15
<b>Exceeds Level?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG). Refer to Appendix B2 for details regarding the construction emission estimates. SOURCE: ESA, 2019

17

18 **TABLE 3.3-21**  
19 **ALTERNATIVE B ESTIMATED MAXIMUM MITIGATED CONSTRUCTION EMISSIONS**

Annual Emissions						
Construction Year	Pollutants (tons per year)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	0.58	5.05	6.62	0.02	3.77	0.61
2021	0.53	5.01	6.55	0.01	3.78	1.45
<b>Maximum Annual Emissions</b>	<b>0.58</b>	<b>5.05</b>	<b>6.62</b>	<b>0.02</b>	<b>3.78</b>	<b>1.45</b>
EKAPCD Significance Threshold	25	25	100	40	15	15
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG). These results include incorporation of tier 3 equipment and Rule 402 requirements.

SOURCE: ESA, 2019

1

2 **Operation and Maintenance**

3 To estimate operational emissions for Alternative B, Alternative A operational emissions were  
 4 reduced by 62.5 percent. As shown in **Table 3.3-22**, *Alternative B Estimated Maximum Operational*  
 5 *Emissions*, the project’s long-term operational emissions would be well below EKAPCD’s  
 6 applicable significance thresholds. Impacts would be similar to Alternative A, but Alternative B  
 7 would have less emissions overall. As project operational emissions would also not exceed the  
 8 EKAPCD thresholds, implementation of the project would not obstruct implementation of an air  
 9 quality plan during operation; therefore, operational impacts would be less than significant.  
 10 Implementation of Mitigation Measure MM 3.3-9a for the solar facility portion of the site,  
 11 identified in Section 3.3.5, would further reduce PM<sub>10</sub> fugitive dust emissions during operation to  
 12 the extent feasible.

13

14

**TABLE 3.3-22  
 ALTERNATIVE B ESTIMATED MAXIMUM OPERATIONAL EMISSIONS**

**Annual Emissions**

Source	Pollutants (tons per year)					
	VOC	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	0.08	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.08	0.10	0.08	0.00	0.02	0.01
Off-Road	0.00	0.02	0.02	0.00	0.00	0.00
<b>Total Annual Emissions</b>	<b>0.16</b>	<b>0.12</b>	<b>0.10</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>
EKAPCD Significant Threshold	25	25	100	40	15	15
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

NOTES: CO = carbon monoxide, NOx = oxides of nitrogen, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter, SOx = sulfur oxides, VOC = volatile organic compounds (ROG).  
 These results include incorporation of tier 3 equipment and Rule 402 requirements.  
 SOURCE: ESA 2019

15

16 **Decommissioning**

17 Decommissioning of the project under Alternative B would be less intensive than construction of  
 18 the Alternative B would not be expected to exceed EAKPCD significance thresholds.

19 **Mitigation Measures**

20 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
 21 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
 22 3.3.5 for mitigation measures).

23 **Level of Significance after Mitigation**

24 Short-term construction related impacts and long-term operational impacts would be less than  
 25 significant.

1 **Impact 3.3-2: The project would violate an applicable air quality standard or contribute**  
2 **substantially to an existing or projected air quality violation.**

3 **Construction**

4 As shown in Table 3.3-20, impacts from the project would not violate the applicable standard for  
5 construction-related NO<sub>x</sub> and PM<sub>10</sub>. Therefore, Alternative B would not violate an applicable air  
6 quality standard or contribute to an existing or projected air quality violation.

7 **Reduced-Visibility Impacts**

8 As demonstrated in Table 3.3-18, PM<sub>10</sub> emissions would exceed the SIL level and could result in  
9 short-term significant and unavoidable impacts to visibility in a Class 1 area, even with  
10 incorporation of recommended Mitigation Measures MM 3.3-1a through MM 3.3-8a for the solar  
11 facility portion of the project site and MM 3.3-1b and MM 3.3-6b for the gen-tie portion of the site  
12 (see Section 3.3.5 for mitigation measures). Therefore, Alternative B could result in or contribute  
13 to a short-term exceedance of the state and federal PM<sub>10</sub> air quality standards resulting in  
14 significant and unavoidable impact resulting in reduced visibility in a Class 1 area.

15 **Operations**

16 Operational emissions would be limited to maintenance activities and vehicle travel by employees  
17 to the project site. Table 3.3-22 summarizes the estimated air pollutant emissions associated with  
18 operations and maintenance of the project. As shown in Table 3.3-22, operational emissions  
19 generated by the proposed project, with incorporation of mitigation measures, would not exceed  
20 the thresholds established by the EKAPCD and impacts would be less than significant.

21 **Reduced-Visibility Impacts**

22 Long-term project operations would not include activities or emission sources that would contribute  
23 to decreased visibility. Therefore, adherence to EKAPCD rules and regulations would result in less  
24 than significant impacts regarding fugitive dust and reduced visibility. Implementation of  
25 Mitigation Measure MM 3.3-9a for the solar facility portion of the site, identified in Section 3.3.5,  
26 would further reduce PM<sub>10</sub> fugitive dust emissions during operation to the extent feasible.

27 **Decommissioning**

28 Decommissioning of the project under Alternative B would be less intensive than construction of  
29 the Alternative B would not be expected to violate an applicable air quality standard or contribute  
30 to an existing or projected air quality violation.

31 **Mitigation Measures**

32 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
33 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
34 3.3.5 for mitigation measures).

35 **Level of Significance after Mitigation**

36 Short-term construction-related impacts and long-term operational impacts would be less than  
37 significant.

1 **Impact 3.3-3: Construction and operation of the project would result in a cumulatively**  
2 **considerable net increase of a criteria pollutant for which the project region (EKAPCD) is**  
3 **nonattainment under applicable federal or state ambient air quality standards (including**  
4 **releasing emissions that exceed quantitative thresholds for ozone precursors).**

5 Alternative B resulted in no construction or operational emissions exceeding the EKAPCD's  
6 thresholds for project-specific impacts. Therefore, impacts would be less than significant and would  
7 not be cumulatively considerable. Alternative B would provide a potential reduction of  
8 approximately 246,282 MT CO<sub>2</sub>e per year if the renewable electricity generated by the project were  
9 to be used instead of electricity generated by fossil-fuel sources<sup>6</sup>.

#### 10 **Cumulative Toxic Air Contaminants**

11 Since Alternative B would not be a significant source of TACs, it is not expected to pose a  
12 significant cumulative TAC impact. Since the majority of the cumulative projects are also solar  
13 plants, TACs would not be considered a significant impact for those projects either. Therefore,  
14 TACs impacts would not be cumulatively considerable and impacts would be less than significant.

#### 15 **Cumulative Carbon Monoxide – Mobile Sources**

16 Traffic increases and added congestion caused by a project can combine to cause a CO “Hotspot”.  
17 There was no traffic study available for this project at the time this analysis was completed.  
18 However, no vehicular traffic other than sporadic maintenance, panel washing trucks, and  
19 employees are expected and due to the location of the site, potentially impacted intersections and  
20 roadway segments are anticipated to operate at a LOS of C or better during project operations.  
21 Therefore, cumulative CO “Hotspot” Modeling was not conducted for this Project and no  
22 concentrated excessive CO emissions are expected to be caused once the project is completed.  
23 Additionally, as the majority of the other projects are also solar plants, traffic would be minimal  
24 and would not result in CO “Hotspots”. Therefore, CO impacts would not be cumulatively  
25 considerable and impacts would be less than significant.

#### 26 **Mitigation Measures**

27 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
28 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
29 3.3.5 for mitigation measures).

#### 30 **Level of Significance after Mitigation**

31 Cumulative construction and operational impacts would not be cumulatively considerable. TAC  
32 and CO impacts would also not be cumulatively considerable.

33 **Impact 3.3-4: Construction and operation of the project could expose sensitive receptors to**  
34 **substantial pollutant concentrations.**

#### 35 **Toxic Air Contaminants**

36 A construction and operational HRA was conducted for Alternative A. The results showed that the  
37 project would result in a cancer risk and chronic HI at the MEIR below the EKAPCD thresholds of

---

<sup>6</sup> See Section 3.8, *Greenhouse Gas Emissions*, for a more detailed analysis.

1 10 in a million and 1, respectively. Therefore, sensitive receptors would not be exposed to  
2 substantial TACs due to project construction emissions and impacts would be less than significant.  
3 Since Alternative A had less than significant impacts, it can be assumed that Alternative B would  
4 also have less than significant impacts since the project size is reduced by 62.5 percent.

#### 5 **CO Hotspots**

6 Since Alternative A resulted in less than significant CO hotspot impacts associated with  
7 construction of the project, Alternative B would also be expected to result in less than significant  
8 impacts as it is a reduced project which would require less haul trucks

#### 9 **Valley Fever**

10 The project has the potential to generate substantial amounts of fugitive dust and suspend Valley  
11 Fever spores with the dust that could then reach nearby sensitive receptors. However, with  
12 implementation of Mitigation Measures MM 3.3-10a for the solar facility portion of the project site  
13 and MM 3.3-7b and 3.3-8b for the gen-tie portion of the site, the exposure to spores that cause  
14 Valley Fever would be minimized. With the implementation of this mitigation measure, dust  
15 generated from construction of the project would not add significantly to the existing exposure  
16 level of people to this fungus, including construction workers, and impacts would be reduced to a  
17 less-than-significant level.

#### 18 **Asbestos**

19 The project site is not located in an area where naturally occurring asbestos is likely to be present  
20 (CDCDMG, 2000). Therefore, impacts associated with exposure of construction workers and  
21 nearby sensitive receptors to asbestos would be less than significant.

#### 22 **Mitigation Measures**

23 Implement Mitigation Measure MM 3.3-10a for the solar facility portion of the project site and  
24 MM 3.3-7b and 3.3-8b for the gen-tie portion of the site. (see Section 3.3.5 for mitigation measure).

#### 25 **Level of Significance after Mitigation**

26 Impacts would be less than significant.

### 27 **3.3.3.3 Alternative C: No Action / No Project**

#### 28 ***NEPA: General Conformity Determination***

29 Under Alternative C, none of the components under Alternative A would be built. If Alternative C  
30 were implemented, there would be no changes to onsite conditions or the existing environmental  
31 setting as described previously. There would be no construction vehicles or site operations that  
32 would generate air pollutants; therefore, there would be no potential for impacts on air quality.

#### 33 ***CEQA: Impact Significance Determination***

34 Alternative C would result in no impacts to air quality since the project would not be built.  
35 However, Alternative C would not provide the potential reduction of carbon dioxide equivalent  
36 emissions that Alternative A (656,752 MT CO<sub>2</sub>e) and Alternative B (246,282 MT CO<sub>2</sub>e) would  
37 provide.

1 **Mitigation Measures**

2 No mitigation measures are required.

3 **Level of Significance after Mitigation**

4 No impacts

5 **3.3.4 Cumulative Impact Analysis**

6 **3.3.4.1 NEPA: General Conformity Analysis**

7 The geographic scope for cumulative air quality impacts used in this analysis includes projects  
8 requiring ground-disturbing activities within a 1- and 6-mile radius of the project site. In summary,  
9 there are several alternative energy (wind and solar) projects that are currently undergoing the  
10 environmental review process. As discussed under Impact 3.3-3, if it is assumed that these projects  
11 were constructed at the same time as the proposed project, construction activities would contribute  
12 emissions of criteria pollutants due to grading activities and the use of heavy-duty diesel equipment.  
13 The construction emissions from the simultaneous construction of multiple cumulative projects in  
14 conjunction with the proposed project could result in the exceedance of USEPA's General  
15 Conformity thresholds.

16 In particular, of the 90 projects evaluated for cumulative effects in conjunction with the proposed  
17 project, 6 projects are known to be of equal or greater size than the proposed project (requiring at  
18 least 4,000 acres of land area). These include the Antelope Valley Solar Project by Renewable  
19 Resources Group, the Fremont Valley Preservation Water Bank and Solar Project, the Alta Infill II  
20 Wind Energy Project, the Alta-Oak Creek Mojave Project, the Avalon Wind Energy Project, and  
21 the Catalina Renewable Energy Project. In addition to a cumulative increase of criteria pollutants  
22 and their precursors, other impacts that may occur from construction include reduced visibility  
23 during high wind events.

24 Given that the project area is currently in nonattainment of NAAQS for ozone, which represents an  
25 existing adverse condition, the cumulative effects due to construction of the project in conjunction  
26 with the related past, present, or reasonably foreseeable probably future projects would also be  
27 considered to be adverse.

28 However, even though the proposed project's contribution of construction-related emissions to  
29 cumulative impacts would be adverse, construction of the project would not cumulatively  
30 contribute on a long-term basis to the air pollution problems in the MDAB. In addition, operation  
31 of the project and the other renewable cumulative projects would offset emissions of criteria  
32 pollutants that would otherwise occur from consumption of fossil fueled-generated electricity from  
33 the grid. It should be noted that the displacement of criteria air pollutant emissions may not occur  
34 within the same air basin as the project and would depend upon the location of the fossil fuel  
35 facility(s) that the project would displace. Cumulative impacts resulting from the combination of  
36 operation of the proposed project in conjunction with the related past, present, or reasonably  
37 foreseeable probable future projects would not be adverse.

1 In summary, adverse cumulative impacts from the proposed project, when considered with existing  
2 and reasonably foreseeable planned projects would occur during construction but not during  
3 operation of the proposed project.

#### 4 **3.3.4.2 CEQA: Cumulative Impact Significance Determination**

5 In accordance with Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in*  
6 *Environmental Impact Reports* (2006), geographic scope for cumulative air quality impacts  
7 includes projects within a 1- and 6-mile radius of the project site. Kern County's Guidelines require  
8 three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized  
9 impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans  
10 (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction  
11 16c). This analysis was provided in Impact 3.3-3.

12 Emissions from the simultaneous construction of multiple cumulative projects in conjunction with  
13 the proposed project could result in an exceedance of EKAPCD's annual and/or daily significance  
14 thresholds. Given that the project area is currently nonattainment of state standards for ozone and  
15 PM<sub>10</sub>, which represents an existing adverse condition, and since the proposed project's construction  
16 emissions would exceed the EKAPCD annual threshold for PM<sub>10</sub>, the proposed project's  
17 contribution to air quality impacts related to construction would be cumulatively considerable, and  
18 the associated cumulative impact as it relates to CEQA would be significant and unavoidable even  
19 with implementation of Mitigation Measures MM 3.3-1a through MM3.3-9a for the solar facility  
20 portion of the project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the site.

21 With regard to consistency with existing air quality plans, it was determined that the project would  
22 comply with the EKAPCD's AQMP as it would not generate population, residences, or substantial  
23 employment that would interfere with the County's adopted growth forecast. When compliance  
24 with applicable rules (such as the EKAPCD's required emissions controls) are considered, the  
25 project's regional contribution to cumulative air quality impacts would be almost negligible,  
26 representing a less-than-significant cumulative impact.

#### 27 **Mitigation Measures**

28 Implement Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the  
29 project site and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project site (see Section  
30 3.3.5 for mitigation measures).

#### 31 **Level of Significance after Mitigation**

32 Cumulative impacts would be significant and unavoidable for construction.

### 33 **3.3.5 Mitigation Measures**

#### 34 **3.3.5.1 Solar Facility Mitigation Measures**

35 **MM 3.3-1a: Fugitive Dust Control Measures.** The project proponent shall ensure construction  
36 of the project shall be conducted in compliance with applicable rules and regulations set forth by  
37 the Eastern Kern Air Pollution Control District. Dust control measures outlined below shall be  
38 implemented where they are applicable and feasible. The list shall not be considered all-inclusive

1 and any other measures to reduce fugitive dust emissions may be required by appropriate agencies  
2 to respond to urgent issues on site:

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

- 5 a. All soil being actively excavated or graded shall be sufficiently watered to prevent  
6 excessive dust. Watering shall occur as needed with complete coverage of  
7 disturbed soil areas. Watering shall take place a minimum of three times daily on  
8 disturbed soil areas with active operations, unless dust is otherwise controlled by  
9 rainfall or use of a dust suppressant.
- 10 b. After active construction activities, soil shall be stabilized with a non-toxic soil  
11 stabilizer or soil weighting agent, or alternative approved soil stabilizing methods.
- 12 c. All unpaved construction and operation/maintenance site roads, as they are being  
13 constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting  
14 agent.
- 15 d. All clearing, grading, earth moving, and excavation activities shall cease during  
16 periods of winds greater than 25 miles per hour (averaged over one hour), or when  
17 dust plumes of 20% or greater opacity impact public roads, occupied structures, or  
18 neighboring property or as identified in a plan approved by the Eastern Kern Air  
19 Pollution Control District.
- 20 e. All trucks entering or leaving the site will cover all loads of soils, sands, and other  
21 loose materials, or be thoroughly wetted with a minimum freeboard height of six  
22 inches.
- 23 f. Areas disturbed by clearing, earth moving, or excavation activities shall be  
24 minimized at all times.
- 25 g. Stockpiles of soil or other fine loose material shall be stabilized by watering or  
26 other appropriate method to prevent wind-blown fugitive dust.
- 27 h. All soil storage piles and disturbed areas that remain inactive for longer than 10  
28 days shall be covered, or shall be treated with appropriate dust suppressant  
29 compounds.
- 30 i. Prior to construction, wind breaks (such as chain-link fencing including a wind  
31 barrier) shall be installed where appropriate.
- 32 j. Where acceptable to the Kern County Fire Department, weed control shall be  
33 accomplished by mowing instead of disking, thereby, leaving the ground  
34 undisturbed and with a mulch covering.
- 35 k. The project operator shall generally avoid grading except when elevation changes  
36 exceed design requirements.
- 37 l. When grading is unavoidable, it is to be phased and done with the application of  
38 approved chemical dust palliatives that stabilize the earth.
- 39 m. Where ground is cleared, plant roots must be left in place where possible to  
40 stabilize the soil.

41 2. Site Construction. After active clearing, grading, and earth moving is completed within any  
42 portion of the site, the following dust control practices shall be implemented:

- 43 a. Dust suppressant shall be used on the same day or day immediately following the  
44 cessation of activity for a particular area where further activity is not planned.
- 45 b. Dependent on specific site conditions (season and wind conditions), revegetation  
46 shall occur in those areas where planned after installation of the solar panels.

- 1 c. All unpaved road areas shall be treated with a dust suppressant or graveled to  
2 prevent excessive dust.
- 3 d. The project operator shall use dust suppression measures during road surface  
4 preparation activities, including grading and compaction.
- 5 e. Final road surfaces must be stabilized to achieve a measurable threshold friction  
6 velocity (TFV) equal to or greater than 100 centimeters per second (cm/S) or a  
7 surface that is greater than or equal to 10 percent of non-erodible elements such as  
8 rocks or stones.
- 9 f. Wind barrier fencing or screening shall be installed, when appropriate.
- 10 3. Vehicular Activities. During all phases of construction, the following vehicular control  
11 measures shall be implemented:
  - 12 a. On-site vehicle speed shall be limited to 15 miles per hour on unpaved areas within  
13 the project site. Vehicles may travel up to 25 miles per hour on stabilized unpaved  
14 roads (application of palliatives, gravel, etc. that reduces the erosion potential of  
15 the soil) as long as such speeds do not create visible dust emissions.
  - 16 b. Visible speed limit signs shall be posted at main ingress point(s) on site and posted  
17 at least every 500 feet, readable in both directions of travel along unpaved roads.
  - 18 c. All areas with vehicle traffic such as the main entrance roadway to the project site  
19 shall be graveled or treated with dust palliatives so as to prevent track-out onto  
20 public roadways.
  - 21 d. All vehicles that are used to transport solid bulk material on public roadways and  
22 that have potential to cause visible emissions shall be provided with a cover, or the  
23 materials shall be sufficiently wetted and loaded onto the trucks in a manner to  
24 provide at least 6 inches of freeboard.
  - 25 e. Streets adjacent to the project site shall be kept clean, and project-related  
26 accumulated silt shall be removed on at a minimum of once daily, or as necessary  
27 to prevent substantial offsite fugitive dust releases. The use of either dry rotary  
28 brushes (unless prior wetting) or blower devices is prohibited.
  - 29 f. Access to the site shall be by means of an apron into the project site from adjoining  
30 surfaced roadways. The apron shall be surfaced or treated with dust suppressants.  
31 If site soils cling to the wheels of the vehicles, then a grizzly, wheel-washer, or  
32 other such device shall be used on the road exiting the project site, immediately  
33 prior to the pavement, to remove most of the soil material from vehicle tires.

34 **MM 3.3-2a: Grading Plan.** Prior to the issuance of grading or building permits, the project  
35 proponent shall provide a comprehensive Phased Grading Plan for review by the Air Force and  
36 Kern County Planning and Natural Resources Department to reduce fugitive dust emissions  
37 resulting from wind erosion at the site. The Phased Grading Plan shall:

- 38 1. Identify a comprehensive grading schedule for the entire project site which demonstrates  
39 the following:
  - 40 a. Minimal Grading. Grading shall be minimized to limit the removal of topsoil and  
41 creation of loose soils. Only in areas where drainage improvements, structural  
42 foundations (e.g. inverter/transformer pads), service roads, and leveling of severe  
43 grades need to occur will grading that removes and recompacts the soil surface  
44 occur. Dust palliatives and water shall be immediately applied following any  
45 grading.

- 1                   b. Dust Palliatives. Application of dust palliatives or water shall be applied  
2                   throughout project construction when required to help reduce dust, especially  
3                   during periods of high winds, and shall include use of (1) an eco-safe,  
4                   biodegradable, liquid copolymer shall be used to stabilize and solidify any soil;  
5                   and (2) A hydro mulch mixture composed of wood fiber mulch and an Environ-  
6                   Mend binder may also be applied, where real-time weather conditions dictate that  
7                   additional measures are necessary.
- 8                   c. Water Suppression. Water trucks shall transit across the project site and  
9                   construction access roads to suppress the fugitive dust from disturbed soils on  
10                  roads and active working areas on a regular and as needed basis.
- 11                2. Minimize all grading activities to those areas necessary for project access and installation  
12                of solar panels and other associated infrastructure associated with the solar facility.  
13                Construction shall commence on areas that have undergone initial grading within 20  
14                calendar days.
- 15                3. Identify, in addition to those measures required by the Eastern Kern Air Pollution Control  
16                District, all measures being undertaken during construction activities and operational  
17                activities to ensure dust being blown off site is minimized. Measure may include, but are  
18                not limited to:
  - 19                   a. Increased use of water and or use of dust suppressant.
  - 20                   b. Pre-seeding and/or use of wood chips as permitted by the EKAPCD
  - 21                   c. Construction of dust screening around the project site.
  - 22                   d. Limit work hours to days where the wind speed is below 25 miles per hour.  
23                   Implement High Wind Event Dust Plan approved by EKAPCD if performing in  
24                   high winds including additional minimization measures.
  - 25                   e. Obtain and Implement all requirements of the EKAPCD Dust Plan and/or Permit  
26                   which may include monitoring of offsite emissions.
- 27                4. After construction is complete, the owner or operator of the site shall ensure the following  
28                activities are maintained to reduce dust generation during normal operations.
  - 29                   a. Sites undergoing weed abatement activity shall not disrupt the soil to the extent  
30                   that visible dust is carried by wind except where weed abatement is directed by a  
31                   fire prevention/control agency.
  - 32                   b. Travel on unpaved roads will be limited to fewer than 25 vehicle trips per day and  
33                   at speeds between 5 and 35 miles per hour unless dust palliatives or frequent water  
34                   is applied to the road surface.
- 35                5. Measures needed to control emissions from vehicle and equipment exhaust are to comply  
36                with the following:
  - 37                   a. All stationary and portable engines must be certified to the appropriate EPA Tier  
38                   rating and CARB Executive Order emission standards. All new stationary and  
39                   portable engines (including off-road equipment) must meet Tier IV emissions  
40                   rating.
  - 41                   b. CARB Fleet requirements for in-use off road equipment rated 25 hp or greater  
42                   (construction equipment) and on-road diesel fueled vehicles with a gross vehicle  
43                   weight greater than 10,000 pounds (semis, trucks, buses) shall limit idling to no  
44                   more than 5 minutes when not actively in use. A vehicle may be allowed to idle  
45                   for longer periods provided idling is necessary for safe operation of the vehicle or  
46                   safety of the vehicle operator (emergency vehicles, air conditioning during  
47                   excessive heat warnings, heating when temperature is below freezing).

- c. The equipment must be registered under Portable Equipment Registration Program (PERP) or Diesel Off-road Online Reporting System (DOORS) or maintain a local permit. The proponent/contractor shall be responsible for maintaining PERP/DOORS registration and notifying the Air Pollution Control District of any portable engines or generators on site.
- d. All equipment and vehicles shall only use gasoline, diesel, or alternative fuels that meet California Air Resources Board (CARB) certification specifications for ultra-low sulfur content and aromatic hydrocarbon content requirements.

**MM 3.3-3a: Construction Equipment Standards.** The project proponent and/or its contractors shall implement the following measures during construction of the project to reduce equipment exhaust:

1. All equipment shall be maintained in accordance with the manufacturer's specifications.
2. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five minutes.
3. Electric equipment shall be used whenever possible in lieu of diesel or gasoline-powered equipment.
4. Use only gasoline, diesel, or alternative fuels that meet CARB certification specifications for ultra-low sulfur content and aromatic hydrocarbon content requirements.
5. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOx emissions.
6. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines, or maintain and use all control equipment as listed on the CARB Executive Order for the engine as issued pursuant to 13 CCR 2420.
7. Prohibit the use of heavy-equipment during first- or second-stage smog alerts and suspend all construction activities during second-stage smog alerts.
8. Utilize existing power sources (i.e., power poles) when available. This measure would minimize the use of higher polluting gas or diesel generators.
9. Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the extent feasible. Require that trucks and vehicles in loading or unloading queues have their engines turned-off when not in use.
10. Off-road equipment engines over 50 horsepower shall be Tier 2 certified or higher (unless Tier 2 equipment has been determined to not be available).
11. No vehicle or engines may idle for more than 5 consecutive minutes except to ensure safe operation of the vehicle or safety of the vehicle operator.
12. All construction-related equipment rated higher than 25hp, including heavy-duty equipment, motor vehicles, and portable equipment, shall have current registration (PERP or DOORS) with CARB or local air permits.

**MM 3.3-4a: On-site Idling Standards.** These measures should be required to ensure the reduction of public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles:

1. The driver shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location.

**MM 3.3-5a: Dust Control.** The project proponent shall continuously comply with the following measures to control fugitive dust emissions during project operations and construction activities:

- 1 1. Increase handling moisture content of graded soils from the typical of 15 percent to 20
- 2 percent during construction activities.
- 3 2. Reduce speed of road grading by motor graders and rollers from typical 7.1 miles per hour
- 4 (mph) to 5 mph.
- 5 3. Prior to construction, onsite roads that will have the greatest extent of onsite travel shall be
- 6 graveled.
- 7 4. Use a dust suppressant such as magnesium chloride, polymer, or similar, to the extent
- 8 feasible, including on gravel roads.

9 **MM 3.3-6a: Onsite Emissions Control.** The project proponent shall continuously comply with  
10 the following measures during construction and operations to control emissions from onsite  
11 dedicated equipment (equipment that would remain onsite each day):

- 12 1. All onsite off-road equipment and on-road vehicles for operation and maintenance shall
- 13 meet the recent CARB engine emission standards or alternatively fueled construction
- 14 equipment, such as compressed natural gas, liquefied gas, or electric, as appropriate. Use
- 15 only gasoline, diesel, or alternative fuels that meet CARB certification specifications for
- 16 ultra-low sulfur content and aromatic hydrocarbon content requirements.
- 17 2. All equipment shall be turned off when not in use, where feasible. Engine idling of all
- 18 equipment shall be minimized to less than five minutes excepting safety requirements.
- 19 3. All equipment engines shall be maintained in good operating condition and in tune per
- 20 manufacturer's specification.

21 **MM 3.3-7a: Coating Requirements.** The developer shall comply with:

- 22 1. The provisions of Eastern Kern Air Pollution Control District Rule 410.1A – Architectural.
- 23 2. Coatings, during the construction of all buildings and facilities. Application of architectural
- 24 coatings shall be completed in a manner that poses the least emissions impacts whenever
- 25 such application is deemed proficient.
- 26 3. The developer shall comply with the provisions of Eastern Kern Air Pollution Control
- 27 District Rule 410.5 during the construction and pavement of all roads and parking areas
- 28 within the Project area. Specifically, the developer shall not allow the use of:
- 29 a. Rapid-cure cutback asphalt
- 30 b. Medium-cure cutback asphalt
- 31 c. Slow-cure cutback asphalt; and
- 32 d. Emulsified asphalt.

33 **MM 3.3-8a: Erosion Control Measures.** The project proponent shall implement the following  
34 wind erosion reduction measures to comply with EKAPCD Rules 401 and 402 during strong wind  
35 events.

- 36 1. Sand fences shall be used to capture sand deposits caused by wind erosion in the southwest
- 37 portion of the project site. Sand fences should be placed to protect structures, including
- 38 residences, and other amenities from wind-blown sand. In particular, sand fencing should
- 39 be placed along Trotter Avenue.
- 40 2. Install permanent fencing with a minimum 50 percent porosity and at least six feet in height
- 41 in those areas immediately west and west-southwest of permanent existing residences prior
- 42 to vegetation removal/soil disturbance within 1,000 feet of the residence.
- 43 3. In areas where grading will occur, temporary construction fences (with minimum 50
- 44 percent porosity and at least four feet high) shall be installed every 200-300 feet

1 perpendicular to the prevailing wind in a manner to reduce fugitive dust from leaving the  
2 area being graded. Depending on the use and effectiveness of water and dust suppressants,  
3 install additional temporary fencing with tighter spacing as necessary.

4 **MM 3.3-9a: Operational/Permanent Wind Erosion Reduction.** The project proponent shall  
5 continuously comply with the following measures during operation to control wind erosion:

- 6 1. Install permanent fencing with a minimum 50% porosity and at least 6 feet in height along  
7 the project boundary along Lone Butte and Trotter. If significant sand movement is  
8 observed on site, additional sand fences should be placed within the site to reduce  
9 movement and protect on-site structures, including photovoltaic arrays, from wind-blown  
10 sand. As sand deposits grow, the sand deposits shall be planted with vegetation to reduce  
11 further erosion.
- 12 2. Prepare and submit a Fugitive Dust Emission Control Plan pursuant to EDAPCD Rule 402  
13 Section V.D.
- 14 3. Apply for and obtain EKAPCD Authority to Construct / Permit to Operate prior to  
15 conducting any work on the project site.
- 16 4. Prepare a Fugitive Dust Emission Monitoring Plan, which shall include installation of on-  
17 site PM<sub>10</sub> air monitors for a minimum of five years, as required by EKAPCD, to ensure  
18 effectiveness of dust mitigation measures or propose alternative PM monitoring plan using  
19 EPA Method 9 Visible Emissions Evaluation or other approved opacity monitoring  
20 methods. Per EKAPCD guidelines, the operator of a facility may petition to cancel District  
21 PTO, in the event that 5years of data demonstrate” (upwind/downwind concentration  
22 difference is 50-µg/m3 or less [based on one-hour averages]).

23 **MM 3.3-10a: Valley Fever.** Prior to ground disturbance activities, the project proponent shall  
24 provide a “Valley Fever Training Information Packet” and conduct training sessions for all  
25 construction personnel. A copy of the handout and a schedule of education sessions shall be  
26 provided to the Kern County Planning and Natural Resources Department. All evidence of the  
27 training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural  
28 Resources Department on a monthly basis. Multiple training sessions may be conducted if different  
29 work crews come to the site for different stages of construction; however, all construction personnel  
30 shall be provided training prior to beginning work. The evidence submitted to the Kern County  
31 Planning and Natural Resources Department regarding the “Valley Fever Training Handout” and  
32 Session(s) shall include the following:

- 33 1. A sign-in sheet (to include the printed employee names, signature, and date) for all  
34 employees who attended the training session.
- 35 2. Distribution of an information packet that includes educational information regarding the  
36 health effects of exposure to criteria pollutant emissions and Valley Fever; symptoms of  
37 exposure; and instruction for reporting cases of flu-like or respiratory illness symptoms  
38 to the Site Safety Officer. Those with persistent systems lasting more than 3 days shall  
39 be recommended to seek immediate medical advice.
- 40 3. Training on methods that may help prevent Valley Fever infection.
- 41 4. A demonstration to employees on how to use personal protective equipment, such as  
42 respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition  
43 of symptoms and earlier treatment of Valley Fever. Though use of the equipment is not  
44 mandatory during work, the equipment shall be readily available and shall be provided  
45 to employees for use during work, if requested by an employee. Proof that the

1 demonstration is included in the training shall be submitted to the county. This proof can  
2 be via printed training materials/agenda, DVD, digital media files, or photographs.

### 3 **3.3.5.2 Gen-tie Mitigation Measures**

4 **MM 3.3-1b: Fugitive Dust Control Measures.** The project proponent shall ensure construction  
5 of the generation tie-lines shall be conducted in compliance with applicable rules and regulations  
6 set forth by the Eastern Kern Air Pollution Control District. Dust control measures outlined below  
7 shall be implemented where they are applicable and feasible. The list shall not be considered all-  
8 inclusive and any other measures to reduce fugitive dust emissions may be required by appropriate  
9 agencies to respond to urgent issues on site:

- 10 1. Land Preparation, Excavation and/or Demolition. The following dust control measures  
11 shall be implemented:
  - 12 a. All soil being actively excavated or graded shall be sufficiently watered to prevent  
13 excessive dust. Watering shall occur as needed with complete coverage of disturbed  
14 soil areas. Watering shall take place a minimum of three times daily on disturbed soil  
15 areas with active operations, unless dust is otherwise controlled by rainfall or use of a  
16 dust suppressant.
  - 17 b. After active gen-tie construction activities, soil shall be stabilized with a non-toxic soil  
18 stabilizer or soil weighting agent, or alternative approved soil stabilizing methods.
  - 19 c. All unpaved construction and site roads, as they are being constructed, shall be  
20 stabilized with a non-toxic soil stabilizer or soil weighting agent.
  - 21 d. All clearing, grading, earth moving, and excavation activities shall cease during  
22 periods of winds greater than 20 miles per hour (averaged over one hour), or when dust  
23 plumes of 20% or greater opacity impact public roads, occupied structures, or  
24 neighboring property or as identified in a plan approved by the Eastern Kern Air  
25 Pollution Control District.
  - 26 e. All trucks entering or leaving the site will cover all loads of soils, sands, and other  
27 loose materials, or be thoroughly wetted with a minimum freeboard height of one foot.
  - 28 f. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized  
29 at all times.
  - 30 g. Stockpiles of soil or other fine loose material shall be stabilized by tarp covering,  
31 watering or other appropriate method to prevent wind-blown fugitive dust.
  - 32 h. All soil storage piles and disturbed areas that remain inactive for longer than 10 days  
33 shall be covered, or shall be treated with appropriate dust suppressant compounds or  
34 covered with tarps.
  - 35 i. Prior to gen-tie construction, wind breaks (such as chain-link fencing including a wind  
36 barrier) shall be installed in areas where appropriate.
  - 37 j. Where acceptable to the Kern County Fire Department, weed control shall be  
38 accomplished by mowing instead of disking, thereby, leaving the ground undisturbed  
39 and with a mulch covering.
  - 40 k. When grading is unavoidable, it is to be phased and done with the application of a non-  
41 toxic soil stabilizer or soil weighting agent, or alternative soil stabilizing methods.
  - 42 l. Where feasible, plant roots shall be left in place to stabilize the soil.
  - 43 m. Reduce and/or phase the amount of the disturbed area (e.g., grading, excavation) where  
44 possible.

- 1       2. Generation tie-line construction. After active clearing, grading, and earth moving is  
2       completed within any portion of the tie-line routes, the following dust control practices  
3       shall be implemented:
  - 4       a. Dust suppressant shall be used on the same day or day immediately following the  
5       cessation of activity for a particular area where further activity is not planned.
  - 6       b. Dependent on specific site conditions (season and wind conditions), revegetation shall  
7       occur in those areas where planned after installation of the generation tie-lines.
  - 8       c. All unpaved road areas used for gen-tie construction or decommissioning shall be  
9       treated with a dust suppressant or graveled to prevent excessive dust.
  - 10      d. The project proponent shall use dust suppression measures during road surface  
11      preparation activities, including grading and compaction.
  - 12      e. Final road surfaces must be stabilized to achieve a measurable threshold friction  
13      velocity (TFV) equal to or greater than 100 centimeters per second (cm/S).
  - 14      f. Wind barrier fencing or screening shall be installed, when appropriate.
- 15      3. Vehicular Activities. During all phases of generation tie-line construction, the following  
16      vehicular control measures shall be implemented:
  - 17      a. On-site vehicle speed shall be limited to 10 miles per hour on unpaved areas within the  
18      generation tie-line areas. Vehicles may travel up to 25 miles per hour on stabilized  
19      unpaved roads (application of palliatives, gravel, etc. that reduces the erosion potential  
20      of the soil) as long as such speeds do not create visible dust emissions.
  - 21      b. Visible speed limit signs shall be posted at main ingress point(s) on generation tie-line  
22      sites.
  - 23      c. All areas with vehicle traffic such as the main entrance roadway to the generation tie-  
24      line installation sites shall be graveled or treated with dust palliatives so as to prevent  
25      track-out onto public roadways.
  - 26      d. All vehicles that are used to transport solid bulk material on public roadways and that  
27      have potential to cause visible emissions shall be provided with a cover, or the  
28      materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide  
29      at least one foot of freeboard.
  - 30      e. Streets used by the project during generation tie-line installation shall be kept clean,  
31      and project-related accumulated silt shall be removed on at a minimum of once daily,  
32      or as necessary to prevent substantial offsite fugitive dust releases. The use of either  
33      dry rotary brushes (unless prior wetting) or blower devices is prohibited.
  - 34      f. Access to the generation tie-line installation sites shall be by means of an apron into  
35      the tie-line sites from adjoining surfaced roadways. The apron shall be surfaced or  
36      treated with dust suppressants. If site soils cling to the wheels of the vehicles, then a  
37      grizzly, wheel-washer, or other such device shall be used on the road exiting the tie-  
38      line sites, immediately prior to the pavement, to remove most of the soil material from  
39      vehicle tires.
  - 40      g. If site soils cling to the wheels of the vehicles, then a track out control device or other  
41      such device shall be used on the road exiting the generation tie line site, immediately  
42      prior to the pavement, to remove most of the soil material from vehicle tires.

43      **MM 3.3-2b: Grading Plan.** Prior to the issuance of grading or building permits, the project  
44      proponent shall provide a comprehensive generation tie-line Phased Grading Plan for review by  
45      the Kern County Planning and Natural Resources Department to reduce fugitive dust emissions  
46      resulting from wind erosion at the site. The Phased Grading Plan shall:

- 1 1. Identify a comprehensive grading schedule for the entire generation tie-line routes which  
2 demonstrates the following:
  - 3 a. **Minimal Grading.** Grading shall be minimized to limit the removal of topsoil and  
4 creation of loose soils. Only in areas where drainage improvements, structural  
5 foundations, service roads, and leveling of severe grades need to occur will grading  
6 that removes and recompacts the soil surface occur. Water and/or dust palliatives shall  
7 be immediately applied following any grading. Construction (installation of posts,  
8 roads, etc.) shall commence on areas that have undergone initial ground disturbance or  
9 grading within 20 calendar days.
  - 10 b. **Dust Suppression:** Application of water and/or dust palliatives shall be applied on an  
11 as-needed basis throughout generation tie-line construction to help reduce dust,  
12 especially during periods of high winds, and shall include use of (1) an eco-safe,  
13 biodegradable, liquid copolymer shall be used to stabilize and solidify any soil; and (2)  
14 A hydro mulch mixture composed of wood fiber mulch and an Environ-Mend binder  
15 may also be applied, where real-time weather conditions dictate that additional  
16 measures are necessary.
  - 17 c. **Water Suppression.** Water trucks shall transit across the generation tie line routes and  
18 construction access roads to suppress the fugitive dust from disturbed soils on roads  
19 and active working areas on a regular and as needed basis.
- 20 2. Minimize all grading activities to those areas necessary for project access and installation  
21 of generation tie lines. Construction shall commence on areas that have undergone initial  
22 grading within 20 calendar days.
- 23 3. Identify, in addition to those measures required by the Eastern Kern Air Pollution Control  
24 District, all measures being undertaken during generation tie-line construction activities to  
25 ensure dust being blown off site is minimized. Measure may include, but are not limited  
26 to:
  - 27 a. Increased use of water and or use of dust suppressant.
  - 28 b. Pre-seeding and/or use of wood chips as permitted by the EKAPCD
  - 29 c. Construction of dust screening around the generation tie-line site.
- 30 4. **Revegetation Plan.** A Revegetation Plan shall be submitted for approval to the Kern  
31 County Planning and Natural Resources Department (per MM 3.1-1b). To minimize long  
32 term dust issues from the project, the generation tie-line routes shall be revegetated  
33 (consistent with existing site conditions). Root balls shall be maintained during vegetation  
34 clearing to maintain soil stability and ultimately vegetation re-growth following  
35 construction of routes. Following construction completion of generation tie-line routes, the  
36 gen-tie areas shall be re-seeded with native vegetation

37 **MM 3.3-3b: Construction Equipment Standards.** The project proponent and/or its contractors  
38 shall implement the following measures during construction of the project:

- 39 1. All equipment shall be maintained in accordance with the manufacturer's specifications.
- 40 2. Construction-related equipment, including heavy-duty equipment, motor vehicles, and  
41 portable equipment, shall be turned off when not in use for more than five minutes.
- 42 3. No individual piece of construction equipment shall operate longer than eight consecutive  
43 hours per day.
- 44 4. Electric equipment shall be used whenever possible in lieu of diesel or gasoline-powered  
45 equipment.

- 1 5. All construction vehicles shall be equipped with proper emissions control equipment and  
2 kept in good and proper running order to substantially reduce NOx emissions.
- 3 6. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent)  
4 if permitted under manufacturer's guidelines.
- 5 7. Prohibit the use of heavy-equipment during first- or second-stage smog alerts and suspend  
6 all construction activities during second-stage smog alerts.
- 7 8. Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in  
8 use to the extent feasible.
- 9 9. Require that trucks and vehicles in loading or unloading queues have their engines turned-  
10 off when not in use.
- 11 10. Off-road equipment engines over 50 horsepower shall be Tier 2 certified or higher (unless  
12 Tier 2 equipment has been determined to not be available).
- 13 11. Provide notification to trucks and vehicles in loading or unloading queues that their engines  
14 shall be turned-off when not in use for more than ten minutes.

15 **MM 3.3-4b: On-site Idling Standards.** During generation tie-line installation these measures  
16 should be required to ensure the reduction of public exposure to diesel particulate matter and other  
17 air contaminants by limiting the idling of diesel-fueled commercial motor vehicles:

- 18 1. The driver shall not idle the vehicle's primary diesel engine for greater than 5 minutes at  
19 any location.
- 20 2. The driver shall not operate a diesel-fueled auxiliary power system to power a heater, air  
21 conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a  
22 sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted  
23 area.

24 **MM 3.3-5b: Dust Control.** The project proponent shall continuously comply with the following  
25 measures to control fugitive dust emissions during generation tie-line installation activities:

- 26 1. Increase handling moisture content of graded soils from the typical of 15 percent to 20  
27 percent during construction activities.
- 28 2. Reduce speed of road grading by motor graders and rollers from typical 7.1 miles per hour  
29 (mph) to 5 mph.
- 30 3. Prior to construction, onsite roads that will have the greatest extent of onsite travel shall be  
31 graveled.
- 32 4. Use a dust suppressant such as magnesium chloride, polymer, or similar, to the extent  
33 feasible, including on gravel roads.

34 **MM 3.3-6b: Onsite Emissions Control.** The project proponent shall continuously comply with  
35 the following measures during construction of generation tie-lines to control emissions from onsite  
36 dedicated equipment (equipment that would remain onsite each day):

- 37 1. All onsite off-road equipment and on-road vehicles for maintenance shall meet the recent  
38 CARB engine emission standards or alternatively fueled construction equipment, such as  
39 compressed natural gas, liquefied gas, or electric, as appropriate.
- 40 2. All equipment shall be turned off when not in use, where feasible. Engine idling of all  
41 equipment shall be minimized.
- 42 3. All equipment engines shall be maintained in good operating condition and in tune per  
43 manufacturer's specification.

1 **MM 3.3-7b: Valley Fever.** Prior to ground disturbance activities, the project proponent shall  
2 provide a “Valley Fever Training Information Packet” and conduct training sessions for all  
3 construction personnel. A copy of the handout and a schedule of education sessions shall be  
4 provided to the Kern County Planning and Natural Resources Department. All evidence of the  
5 training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural  
6 Resources Department on a monthly basis. Multiple training sessions may be conducted if different  
7 work crews come to the site for different stages of construction; however, all construction personnel  
8 shall be provided training prior to beginning work. The evidence submitted to the Kern County  
9 Planning and Natural Resources Department regarding the “Valley Fever Training Handout” and  
10 Session(s) shall include the following:

- 11 1. A sign-in sheet (to include the printed employee names, signature, and date) for all  
12 employees who attended the training session.
- 13 2. Distribution of an information packet that includes educational information regarding the  
14 health effects of exposure to criteria pollutant emissions and Valley Fever; symptoms of  
15 exposure; and instruction for reporting cases of flu-like or respiratory illness symptoms to  
16 the Site Safety Officer. Those with persistent systems lasting more than 3 days shall be  
17 recommended to seek immediate medical advice.
- 18 3. Training on methods that may help prevent Valley Fever infection.
- 19 4. A demonstration to employees on how to use personal protective equipment, such as  
20 respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition  
21 of symptoms and earlier treatment of Valley Fever. Though use of the equipment is not  
22 mandatory during work, the equipment shall be readily available and shall be provided to  
23 employees for use during work, if requested by an employee. Proof that the demonstration  
24 is included in the training shall be submitted to the Kern County Planning and Natural  
25 Resources Department. This proof can be via printed training materials/agenda, DVD,  
26 digital media files, or photographs.

27 **MM 3.3-8b: Valley Fever Public Awareness Program.** Prior to the issuance of grading permits,  
28 a onetime fee shall be paid to the Kern County Public Health Services Department, in the amount  
29 of \$3,200, for Valley Fever public awareness programs.

### 30 3.3.6 Residual Impacts after Mitigation

31 Mitigation Measures MM 3.3-1a through MM 3.3-10a for the solar facility portion of the project  
32 site and Mitigation Measures MM3.3-1b through MM3.3-8b for the gen-tie facility would  
33 substantially reduce potential impacts associated with construction and operation of the Proposed  
34 Action. However, even with implementation of the mitigation measures, short-term construction  
35 emissions of PM<sub>10</sub> could exceed the CEQA significance threshold resulting in a significant impact  
36 on the human environment. No other residual impacts are expected to occur as a result of  
37 construction, operation, and maintenance of the project or an alternative.

## 3.4 Airspace Management and Use

### 3.4.1 Affected Environment

This section of the EIS/EIR describes the affected environment for airspace management and use in the Proposed Action area, including the regulatory and environmental settings.

Airspace management is defined as the direction, control, and handling of flight operations in the “navigable airspace” that overlies the geopolitical borders of the United States and its territories. “Navigable airspace” is airspace above the minimum altitudes of flight prescribed by regulations under U.S. Code (USC) Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the take-off and landing of aircraft (49 USC Section 40102).

National airspace is defined as the space that lies above a nation and comes under its jurisdiction. Although it is generally viewed as being unlimited, airspace is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes. The Federal Aviation Administration (FAA) defines National Airspace System (NAS) as “...a common network of airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; and rules, regulations and procedures, technical information and manpower and material.” The NAS is designed and managed to protect aircraft operations around most airports and along air traffic routes connecting these airports, as well as within special areas where activities such as military flight training are conducted.

The FAA has established Special Use Airspace (SUA) within the NAS to contain or segregate activities that would be hazardous to nonparticipating aircraft. Military Operating Areas are defined airspace areas established by the FAA to separate/segregate certain military aviation activities from Instrument Flight Rules traffic and to identify where these activities are conducted for commercial Visual Flight Rules traffic. A restricted area is airspace within which flight by nonparticipating aircraft, while not wholly prohibited, is subject to restriction during scheduled periods when hazardous activities are being performed (14 Code of Federal Regulations [CFR] Part 1.1). Restricted areas designated as “joint use” by the FAA permit Air Traffic Control (ATC) to route nonparticipating aircraft through this airspace when it is not in use or when appropriate separation can be provided. SUA, which is identified for military and other governmental activities, is charted and published by the National Aeronautical Charting Office in accordance with FAA Order JO7400.2L and other applicable regulations and orders. Management of this resource considers how airspace is designated, used, and administered to best accommodate the individual and common needs of military, commercial, and general aviation.

Edwards Air Force Base (AFB) supports aircraft testing activities, and the airspace over Edwards AFB is used primarily for test flights. Potential impacts to pilots as a result of project implementation include potential glare and obstruction hazards presented by project infrastructure.

#### 3.4.1.1 Scoping Issues Addressed

No comments related to airspace management and use were received.

1 **3.4.1.2 Regulatory Framework**

2 ***Federal***

3 The FAA is authorized by statute, Title 49 of the USC, Section 40103(a)(1), to ensure the safety of  
4 air navigation and the efficient use of navigable airspace by aircraft. Title 14 CFR Part 77, addresses  
5 hazards to air navigation and provides regulatory guidance for FAA’s authority.

6 The U.S. Air Force (USAF) implements FAA and Department of Defense (DoD) policy and  
7 guidance regarding Special Use Airspace and Airspace for Special Use through various  
8 instructions, processes and organizations. The Air Force Flight Standards Agency, AF/A30,  
9 Headquarters Air Force (HAF) Encroachment Management Working Group, major command  
10 (MAJCOM) and Unit Airspace Managers are responsible for identifying and evaluating projects  
11 which may adversely affect operations associated with military airfields, ranges, and airspace.

12 ***State***

13 The California Public Utility Code regulates land use to ensure the safety of aircraft operating in  
14 the vicinity of airports, including California Public Utility Code Section 21402, which states no use  
15 shall be made of the space above the land and waters of the State of California which would  
16 interfere with the right of flight, and California Public Utility Code Section 21403(c), which  
17 explains the right of flight in aircraft, including the right of safe access to public airports, which  
18 includes the right of flight within the zone of approach of any public airport without restriction or  
19 hazard.

20 ***Local***

21 The Kern County Zoning Ordinance has regulations regarding maximum permitted heights, both  
22 within specific zone districts and in districts with the H (Airport Approach Height) Combining  
23 District. The purpose of the H Combining District is to minimize aviation hazards by regulating  
24 land uses, restricting the height of buildings and vegetation, and specifying design criteria necessary  
25 to promote aviation safety. Structure height is restricted to prevent aesthetic impacts and to provide  
26 privacy for neighboring properties. Height limits are also established for structures within the Joint  
27 Service Restricted R-2508 Complex (which is part of the SUA) that require written concurrence  
28 from the military authorities responsible for operations in the area.

29 The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and  
30 criteria by which the County can address compatibility issues when making planning decisions  
31 concerning airports and military aviation operations. The proposed solar facility would be located  
32 on Edwards AFB, which is a military aviation installation identified in the ALUCP. In addition, the  
33 proposed solar facility would be located approximately 5 miles from the Mojave Air and Space  
34 Port and at the nearest point, the proposed gen-tie line route options would pass within  
35 approximately 1.5 miles of the Mojave Air and Space Port, which is also identified in the ALUCP.  
36 Section 4.9 of the ALUCP addresses the Mojave Air and Space Port, and land uses and procedures  
37 relative to its aviation and includes height restrictions, and other compatibility criteria. In addition,  
38 Section 4.17.3 of the ALUCP requires that the China Lake Naval Air Weapons Station and Edwards  
39 AFB be notified of development that falls within identified notification categories. Due to the

1 location of the site within the R-2508 Complex and proximity to the Edwards AFB, the project falls  
2 within the following notification categories established in Section 4.17.3 of the ALUCP:

- 3 • Any structure within 75 miles of the R-2508 Complex that is greater than 50 feet tall.
- 4 • Any environmental document or discretionary project within 25 miles of the military  
5 installation boundaries.
- 6 • Any project that would create environmental impacts (e.g. visibility, elevated obstructions)  
7 within 25 miles of the R-2508 Complex.
- 8 • Any project within 25 miles of the centerline of any route/corridor.

### 9 **3.4.1.3 Environmental Setting**

10 This section of the EIS/EIR provides a description of airspace that could be affected by the proposed  
11 project. This description of airspace and its use is based on information included in “Environmental  
12 Assessment for Routine and Recurring Unmanned Aerial Vehicle Flight Operations at Edwards Air  
13 Force Base, California” published in 2007 (USAF, 2007).

#### 14 ***Regional Setting***

15 Edwards AFB is located in the Antelope Valley area of eastern Kern County. Airspace in the  
16 Antelope Valley area of southern California is used for all types of commercial and military  
17 aviation activities, and is managed by Los Angeles Air Route Traffic Control Center (ARTCC) and  
18 High Desert Terminal Radar Approach Control (TRACON) facilities. The military uses the  
19 airspace in the study area to maintain overall training and readiness for all branches of the military.

20 Within the NAS over Antelope Valley is SUA R-2508. This Joint Service Restricted R-2508  
21 Complex airspace provides the largest single area of SUA over land in the United States, covering  
22 a land area of 20,000 square miles, with 3,000 square miles in Kern County. The R-2508 Complex  
23 airspace, shown in **Figure 3.4-1**, Special Use Airspace over Antelope Valley and Edwards Air  
24 Force Base, comprises 140 miles north to south (Bishop to Edwards AFB), and 110 miles east to  
25 west (Nevada state line to Bakersfield). The R-2508 Complex encompasses large portions of Inyo,  
26 Kern, San Bernardino, and Tulare Counties in east-central California and extends into Nevada’s  
27 Esmeralda County. There are 16 small airports or airfields and two military airfields (Edwards AFB  
28 and Naval Air Warfare Station, China Lake) within the R-2508 Complex. This airspace is  
29 scheduled, regulated, and controlled to provide safe aircraft test areas.

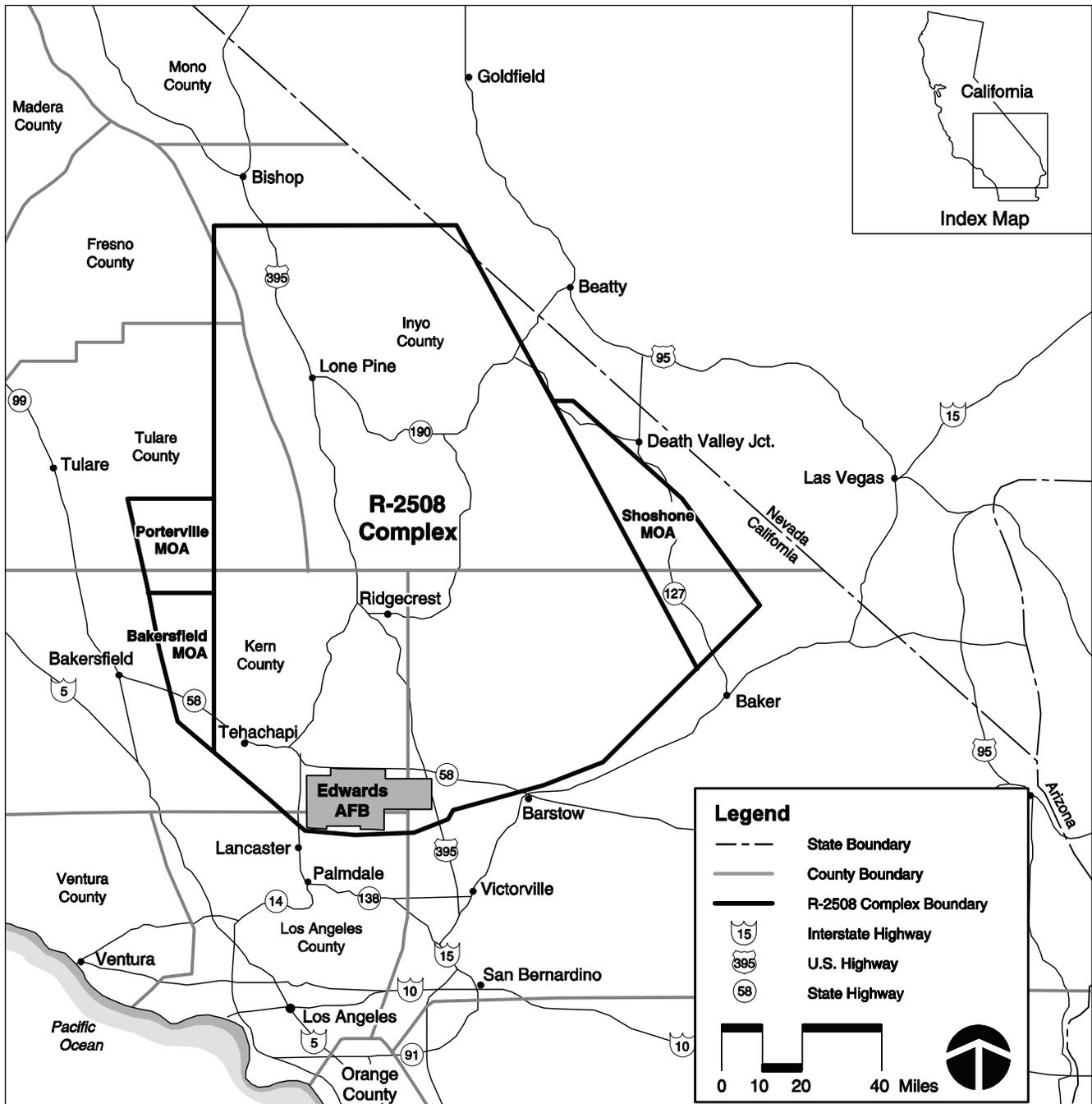


Figure 3.4-1: SPECIAL USE AIRSPACE OVER ANTELOPE VALLEY AND EDWARDS AFB

1 The R-2508 Complex has unique characteristics that allow the Air Force, Navy, Marine Corps,  
2 Army, National Aeronautics and Space Administration (NASA), and other governmental and  
3 commercial testing entities to conduct safe, large-scale testing activities for aircraft, spacecraft, and  
4 advanced weapon systems. It includes all the airspace and associated land presently used and  
5 managed by the three principal military entities conducting activities in the Upper Mojave Desert  
6 region: Air Force Flight Test Center, Edwards AFB; Army National Training Center, Fort Irwin;  
7 and Naval Air Warfare Center Weapons Division, China Lake. Within the R-2508 Complex there  
8 are seven Instrument Flight Rules and Visual Flight Rules low-altitude training routes and one  
9 slow-speed, low-altitude training route (SR 390). All routes are designated as “Military Assumes  
10 Responsibility for Separation of Aircraft (MARSA) operations,” which are established by  
11 coordinating scheduling, meaning that the FAA is not responsible for ensuring separation between  
12 aircrafts in the airspace used by the military.

13 The R-2508 Complex lies exclusively within the Los Angeles ARTCC boundaries. The controlling  
14 agency for this SUA is High Desert TRACON. During the published hours of use, the using agency  
15 (e.g., Air Force, Navy, Marine Corps, Army) is responsible for controlling all military activity  
16 within the SUA and ensuring that its perimeters are not violated. When the airspace is scheduled to  
17 be inactive, the using agency releases it back to the controlling agency (High Desert TRACON)  
18 and, in effect, the airspace is no longer restricted.

19 Only one established commercial air traffic route transects the R-2508 Complex; however, that  
20 route is normally closed during daylight hours on Monday through Friday.

## 21 **Local Setting**

### 22 **Military Airspace**

23 The airspace immediately above Edwards AFB is designated as Restricted Area R-2515 in the  
24 southern portion of the R-2508 Complex. Restricted Areas are areas that denote the existence of  
25 unusual, often invisible hazards to aircraft such as artillery firing, aerial gunnery, or guided  
26 missiles. An aircraft may not enter a Restricted Area unless permission has been obtained from the  
27 controlling agency. Restricted Area R-2515 covers about 1,575 square miles of airspace that has  
28 been designated as restricted for use by the DoD, NASA, and other government agencies. The R-  
29 2515 Complex encompasses portions of Kern, San Bernardino, and Los Angeles Counties in east-  
30 central California. **Figure 3.4-2**, Restricted Airspace for Military Aviation over Edwards Air Force  
31 Base, shows the configuration of the setting of R-2515 Airspace within the R-2508 Complex in the  
32 NAS in the Antelope Valley Region. This airspace is scheduled, monitored, regulated, and  
33 controlled to provide safe aircraft test areas.

34 The average number of flights at Edwards AFB is approximately 24 per day. Flights include low  
35 level test and training flights along pre-established routes, flight tests within restricted areas and  
36 military training areas, and flights transitioning to other FAA-controlled airspace. Supersonic  
37 flights are routinely conducted, but occur only over approved areas.

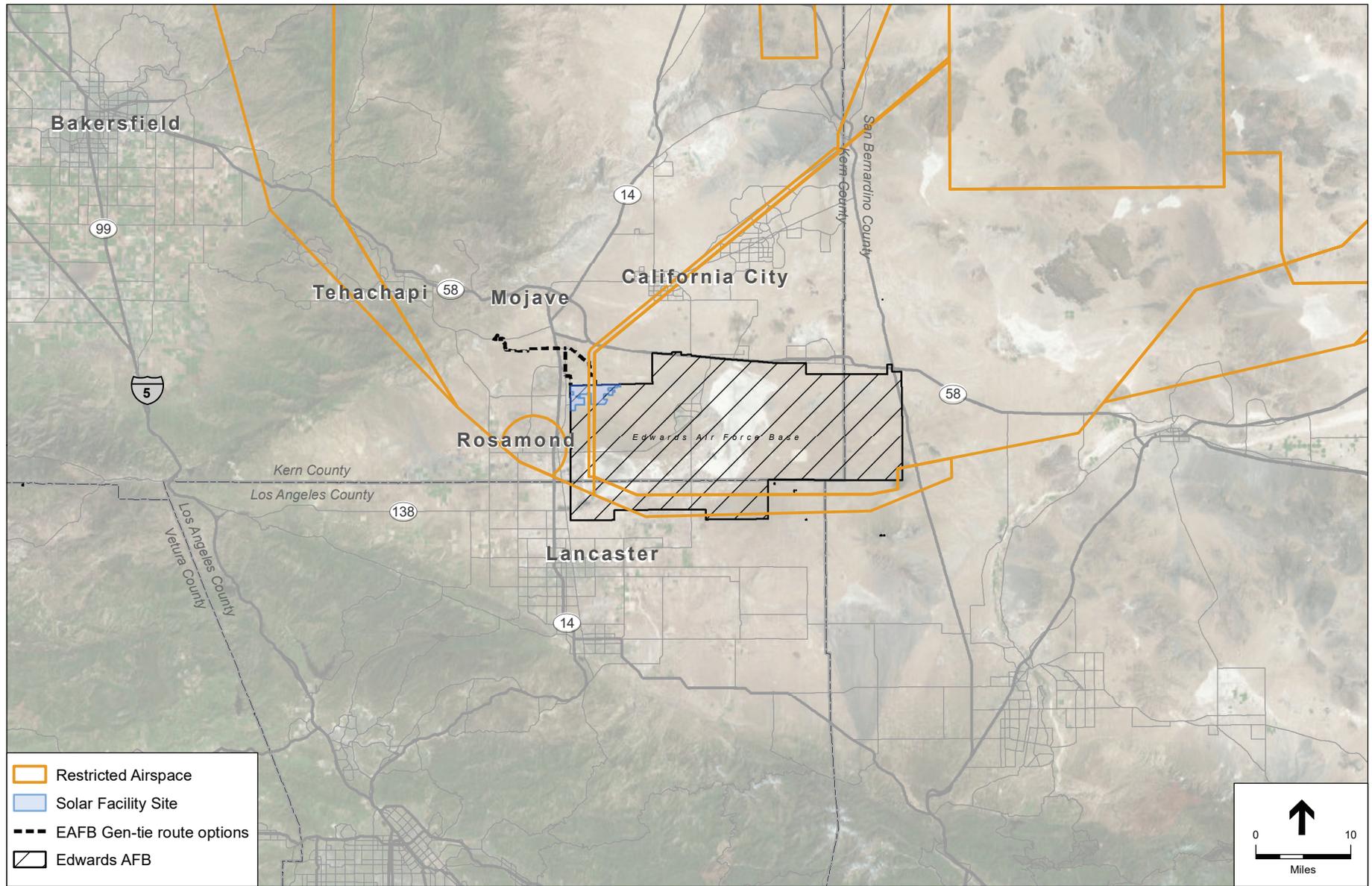


Figure 3.4-2: RESTRICTED AIRSPACE FOR MILITARY AVIATION OVER EDWARDS AFB

## 1 Other Airports

2 The proposed gen-tie route options would be within an area covered by the ALUCP of Kern County  
3 (see Section 3.4.1.2, *Regulatory Framework*, for more information).

4 The proposed solar facility and gen-tie line would be located approximately 5 miles and 1.5 miles,  
5 respectively, from the Mojave Air and Space Port. The airport is operated by the East Kern Airport  
6 District and is a public use airport. The airport is situated on 2,998 acres of land and includes three  
7 paved runways that range in length from 3,946 feet to 12,503 feet. The Mojave Air and Space Port  
8 was certified as a spaceport by the FAA in June 2004 and is presently operated primarily as a  
9 civilian-use airport and spaceport. It serves as a Civilian Flight Test Center, is the location of the  
10 National Test Pilot School, and also serves as a base for modifications of major military jets and  
11 civilian aircraft. Current daily use is frequent with an average of 48 aircraft operations per day  
12 (Kern County, 2012). The closest private airstrip to the project site is the Pontius Airport, which is  
13 a small, private airstrip located about 2 miles west of the project site. The airport is situated on 40  
14 acres and includes two dirt runways at 1,300 feet and 1,900 feet in length, respectively. The airport  
15 is presently used for small, private aircraft only (single-engine, general aviation).

## 16 3.4.2 Environmental Consequences

17 This section of the EIS/EIR describes the environmental consequences relating to airspace  
18 management for the Project. It describes the methods used to determine the effects of the proposed  
19 project and lists the thresholds used to conclude whether an effect would be significant.

### 20 3.4.2.1 Assessment Methods/Methodology

21 This assessment of airspace use and management discusses how the Proposed Action and  
22 alternatives, including the no-action alternative, may affect the conduct of military test flights  
23 conducted within the Restricted R-2515 airspace over Edwards AFB. All information provided in  
24 this section on the assessment of the proposed project on the management and use of airspace over  
25 Edwards AFB is based on information provided in these two studies. This analysis includes an  
26 assessment of:

- 27 • General solar reflectivity studies and the probability of glint/glare occurrence and impact
- 28 • Airspace penetration
- 29 • Communication system interference
- 30 • FAA and Air Force solar project glint and glare assessment

### 31 3.4.2.2 General Solar Reflectivity Studies

32 Reflectivity refers to light that is reflected off any surface. The potential impacts of reflectivity are  
33 glint and glare. Glint is a momentary flash of bright light and glare is a continuous source of bright  
34 light, both of which can cause brief visual impairment (also known as afterimage or temporary  
35 flash blindness) (FAA, 2010) (FAA Order 7400.2L defines flash blindness as “Generally, a  
36 temporary visual interference effect that persists after the source of illumination has ceased”). The  
37 potential impact of glare can be measured using the magnitude of reflection (referred to as retinal

1 irradiance) and the subtended angle of the reflection (derived from the size of the reflected area and  
2 its distance from the sensitive receptor).

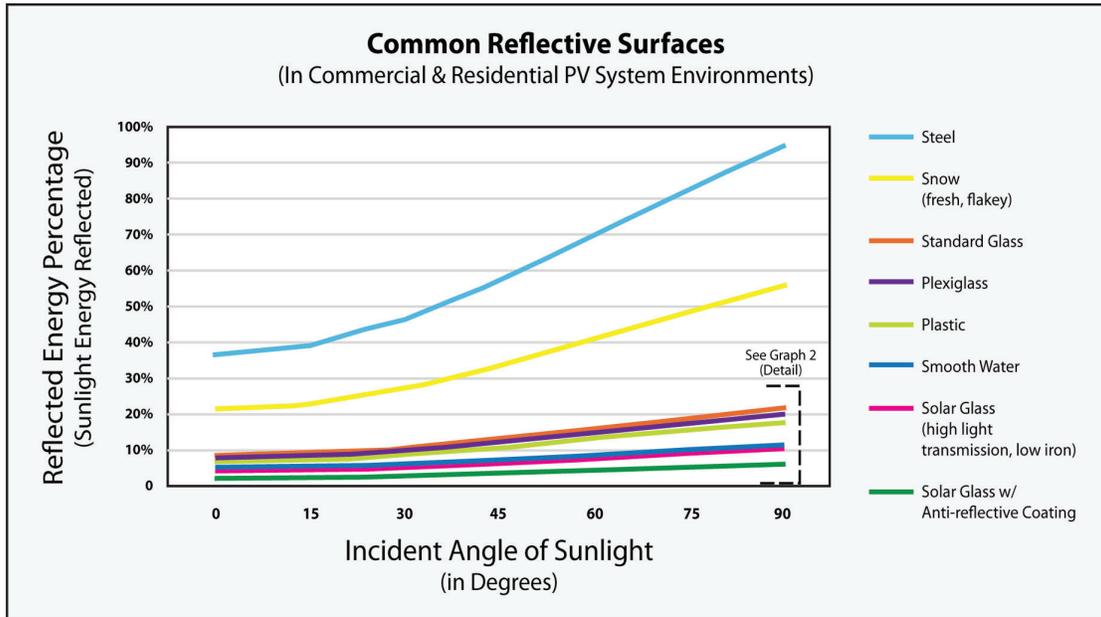
3 The reflectivity of a surface is influenced by two primary factors: the color of the surface and its  
4 physical composition. Color is important because some colors absorb light and its energy, whereas  
5 others reflect it. Light colors are most reflective (white being the most), and dark colors are least  
6 reflective. Also affecting the extent of reflection are the physical characteristics of the material's  
7 surface. Flat, smooth surfaces would reflect a more concentrated amount of sunlight back to the  
8 receiver, which is referred to as specular reflection. The more polished a surface is, the more it  
9 shines. Examples of surfaces that produce specular reflection include mirrors and still water. Rough  
10 or uneven surfaces would reflect light in a diffuse or scattered manner and therefore would not be  
11 received by the viewer as brightly. Diffuse reflection produces a less concentrated light and occurs  
12 from rough surfaces such as pavement, vegetation, and choppy water.

13 The amount of light reflected off of a solar panel surface depends on the amount of sunlight hitting  
14 the surface as well as the surface reflectivity. The amount of sunlight hitting the surface of the solar  
15 panel would vary based on geographic location, time of year, cloud cover, and solar panel  
16 orientation. The amount of sunlight reflected by the solar projects would also vary based on the  
17 type of solar power system and its materials and design. Photovoltaic (PV) solar panels use silicon  
18 to convert sunlight to electricity and silicon is naturally reflective. Solar PV employs glass panels  
19 that are designed to maximize absorption and minimize reflection to increase electricity production  
20 efficiency. To limit reflection, solar PV panels are constructed of dark light-absorbing materials  
21 and covered with an anti-reflective coating. This design results in the dark appearance of the solar  
22 panel. Recent generations of panels have included an anti-reflective material on the outer surface  
23 of the glass to further limit sunlight reflection. Current solar panels reflect as little as 2 percent of  
24 the incoming sunlight depending on the angle of the sun and assuming use of anti-reflective  
25 coatings (Ho et al., 2009).

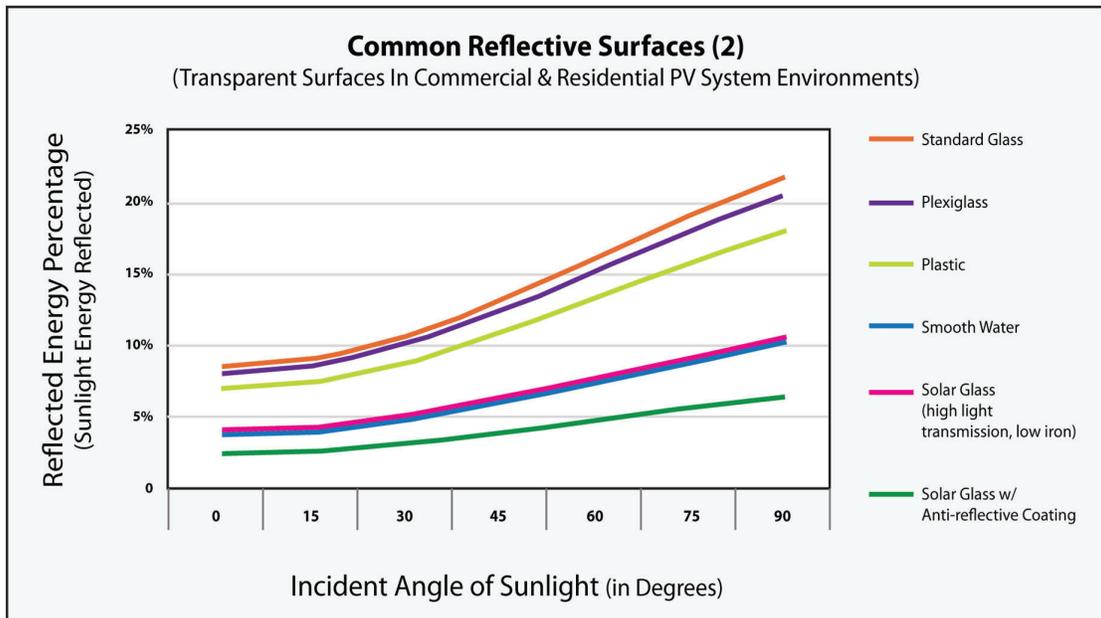
26 Solar modules use "high-transmission, low iron glass" which absorbs more light, producing small  
27 amounts of glare and reflectance compared to normal glass.

28 **Figure 3.4-3**, Spectral Surfaces and their Reflective Properties at Varying Incident Light Angles,  
29 shows the reflected energy of sunlight off some common residential and commercial surfaces. Solar  
30 glass sheets (the glass layer that covers the PV panels) are typically tempered glass that is treated  
31 with an anti-reflective or diffusion coating that further diffuses the intensity of glare produced. The  
32 figure shows that solar panels are about half as reflective as standard glass used in residential or  
33 commercial applications. Solar panels without an anti-reflective coating have approximately the  
34 same reflectivity as water; with an anti-reflective coating, the reflectivity is significantly less than  
35 that of water. Flat-plate panels reflect less sunlight than weathered, white concrete or snow (Black  
36 & Veatch, 2010). **Figure 3.4-4**, The Law of Reflection and its Application to Solar Panels, shows  
37 how the energy would be reflected.

38 The chart below shows the relative reflectivity of different surfaces: It shows that the reflectivity  
39 of PV modules is low and about the same as with water.

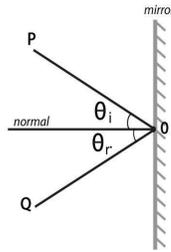


Graph 1: Common Spectral Surfaces

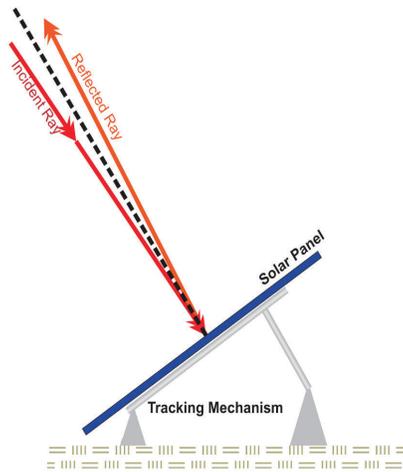


Graph 2: (Detail) Common Spectral Surfaces with Highly Spectral Surfaces Removed

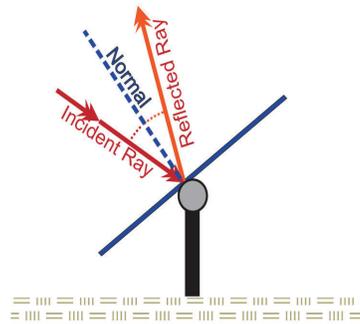
Figure 3.4-3: SPECTRAL SURFACES AND THEIR REFLECTIVE PROPERTIES AT VARYING INCIDENT LIGHT ANGLES



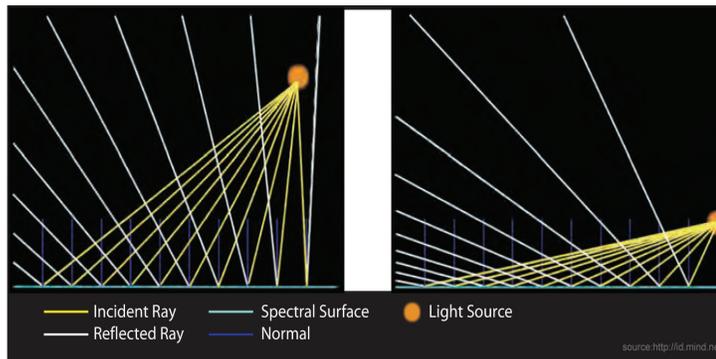
**The Law of Reflection** - which states that the direction of incoming light (the incident ray), and the direction of outgoing light reflected (the reflected ray) make the same angle with respect to the surface normal (perpendicular to the reflecting surface), thus the angle of incidence equals the angle of reflection; this is commonly stated as  $\theta_i = \theta_r$ .



Incident and reflected rays of light that would result from an optimally oriented solar panel on a variable tilt single axis tracking mechanism.



Incident and reflected rays of light that would result from the fixed tilt single axis tracker array.



This diagram illustrates how the angle of the reflected ray reacts to a light source moving to a lower horizontal azimuth. The conditions in the right illustration would increase the possibility of glare to a terrestrial-based viewer.

**Figure 3.4-4: THE LAW OF REFLECTION AND ITS APPLICATION TO SOLAR PANELS**

### 3.4.2.3 FAA Solar Projects

Solar panels have been installed on or near a number of small and large airports as part of a drive to utilize renewable energy for airport operations. More than 15 airports around the country are operating solar facilities, and airport interest in solar energy is growing rapidly (FAA, 2010). **Table 3.4-1, Solar Projects On or Adjacent to Airports**, presents a summary of solar projects on or adjacent to airports around the world (Spaven Consulting, 2011). Many of these projects are located in states with very high duration and intensity of sunlight, similar to conditions at Edwards AFB. There has been concern that reflection from solar panels may cause a momentary visual impairment to air traffic controllers or pilots and may therefore be hazardous to air navigation. Concerns about solar projects on airports are largely tied to the possibility of temporary blindness or eye damage to pilots in a critical phase of a flight. In response, the FAA published a report called “Technical Guidance for Evaluating Selected Solar Technologies on Airports” in 2010 to meet the regulatory and information needs of FAA personnel and airport sponsors in evaluating airport solar projects. The guidance includes case studies of operating solar projects at Denver International, Fresno Yosemite International, Metropolitan Oakland International, Meadows Field (Bakersfield), and Albuquerque International Sunport.

Solar installations are presently operating at San Francisco, Munich, Zurich, Singapore, Boston, and Stuttgart airports. Project managers from these six airports, where solar panels have been operational for 1 to 3 years, were asked about glare complaints. Air traffic controllers at three of those airports were also asked to comment on the effect of glare on their daily operations (FAA, 2010; Spaven Consulting, 2011). As of 2010, the FAA had not received any reports or serious complaints from pilots or air traffic controllers due to glare from existing solar PV installations at any of the six airports (FAA, 2010). The anecdotal evidence suggests that either significant glare is not occurring during times of operation or if glare is occurring, it is not a negative effect and a minor part of the landscape to which pilots and tower personnel are exposed. (FAA, 2010)

Two other notable solar projects on airport property include the installations at Meadows Field (BFL) in Bakersfield, California, which hosts an 800 kW solar facility, located approximately 250 feet from the runway taxiway, and Fresno Yosemite International Airport (FAT) in Fresno, California, where there is a 2-megawatt (MW) facility in the Runway Protection Zone near the end of a runway. The Meadows Field solar project has been in operation since January 2009. The solar project at Fresno has been operational since June 2008. In both cases, the air traffic controllers stated that glare has not affected their operations and they had not received complaints from pilots about glare being a problem. Oakland International’s General Aviation Airport is host to a 756 kW ground-mounted system owned and operated by a private company. The project consists of 4,000 fixed solar panels and has been operational since November 2007 and there have been no reports of airspace impacts from radar or glare from the ATC tower or pilots.

Solar projects have been under construction or planned at a number of airports in the United States, such as Indianapolis, Indiana; Phoenix, Arizona; Rochester, New York; Rockford, Illinois; and many airports all over the world. FAA’s approval of these construction plans (through issuance of “Determination of No Hazard” [see Table 3.4-1]) indicates that the FAA does not consider a large number of solar panels at or in the vicinity of the airport as hazardous to air navigation.

1  
2

**TABLE 3.4-1  
 SOLAR PROJECTS ON OR ADJACENT TO AIRPORTS**

<b>Site/Airport</b>	<b>City/State</b>	<b>Type of Facility</b>	<b>Aviation Facility</b>	<b>Reported Impacts</b>
Kramer Junction	Victorville, CA	Concentrating Solar	Kramer Crop Dusting Strip, Edwards AFB	None Reported In 20 Years of Operation
Blythe	Blythe, CA	Parabolic Trough Concentrating Solar (1,000 MW)	Blythe Airport	No Information
Pena Boulevard	Denver, CO	Tracking PV Arrays	Denver International Airport	FAA Finding of No Hazard
Denver International Airport	Denver, CO	Fixed PV Arrays	Commercial Airport	FAA Finding of No Hazard
San Francisco Airport	Burlingame, CA	Roof-mounted PV Panels	Commercial Airport	FAA Finding of No Hazard
Fresno Airport	Fresno, CA	PV Arrays	Commercial Airport	FAA Finding of No Hazard
Bakersfield Airport	Bakersfield, CA	PV Arrays	General Aviation Airport	FAA Finding of No Hazard
Oakland Airport	Oakland, CA	Fixed PV Arrays	Commercial Airport	FAA Finding of No Hazard
Albuquerque Airport	Albuquerque, NM	Roof-mounted PV Panels	Commercial Airport	No Information
Boston Logan Airport	Boston, MA	Roof-mounted PV Panels	Commercial Airport	No Information
San Jose Airport	San Jose, CA	Roof-mounted PV Panels	Commercial Airport	No Information
Houston Airport	Houston, TX	Roof-mounted PV Panels	Commercial Airport	No Information
Ben Gurion Airport	Tel Aviv, Israel	Roof-mounted PV Panels	Commercial Airport	No Information
Adelaide Airport	Adelaide, Australia	PV Panels on Terminal Buildings	Commercial Airport	No Information
Munich Airport	Munich, Germany	Roof-mounted PV Panels	Commercial Airport	No Information
Prescott Airport	Phoenix, AZ	Fixed & Tracking PV Arrays	General Aviation Airport	No Information
Yuma Airport	Yuma, AZ	Roof-mounted PV Panels	Commercial Airport	No Information

SOURCE: Spaven Consulting (2011)

3  
4

#### 3.4.2.4 Air Force Solar Projects

The Air Force conducted flights over an existing solar energy facility (the solar energy generating station power plant in the Mojave Desert at Harper Lake – a solar thermal facility with reflecting mirrors, not PV designed to absorb light) to determine if the facility produced visual distractions for pilots. It was documented that no significant visual distractions were observed during the over flights (Harron, 2010).

A 14 MW solar power plant has been operating at Nellis AFB in Clark County, Nevada, since 2007. Occupying 140 acres of land at the western edge of the base, this ground-mounted PV system employs an advanced sun-tracking system. Tilted toward the south, each set of solar panels rotates around a central bar to track the sun from east to west. The 14 MW systems generate more than 30 million kilowatt-hours of electricity each year (about 82,000 kilowatt-hours per day).

There are three 1 MW solar power facilities operating at three different locations at Edwards AFB. Although the scale of the proposed project is vast compared to these facilities, this analysis considers experience of pilots in test flights over Edwards AFB and other AFBs where solar projects have been installed.

The Office of the Under Secretary of Defense (OSD) has directed that solar renewable energy projects using the authority found in 10 USC Section 2667 (Enhanced Use Leases such as the project) must document the potential for glint/glare from the project through the use of the Solar Glare Hazard Analysis Tool (SGHAT) prior to obtaining OSD energy certification. SGHAT was developed by Sandia National Laboratories in collaboration with the FAA to provide a quantified assessment of when and where glare would occur, as well as information about potential ocular impacts. SGHAT uses a Google Maps interface with site specific parameters such as flight path proximity to the project, glide slope, tracking versus fixed array, and solar panel orientation and tilt to simulate the probability of glint/glare occurrence during a specific time of day. Results of the SGHAT analysis for the project are shown on **Figure 3.4-5**, OVSP SGHAT Analysis, and indicate a low potential for temporary after-image or glint/glare during the spring and fall months and between 1500 (3:00 p.m.) and 1600 hours (4:00 p.m.) (OSD, 2014).

Pilots are directed to report perceived or actual flight risks to the installation safety officer and subsequently to the Air Force Flight Safety Center in accordance with AFIs 91-202, *The US Air Force MISHAP Prevention Program* and 91-204, *Safety Investigation Reports*. The Air Force Safety Center has no documented glint/glare reports from any active duty, guard, or reserve flight operations. This includes flight operations on FAA-controlled airports with active solar facilities illustrated in Table 3.4-1.



### Threshold

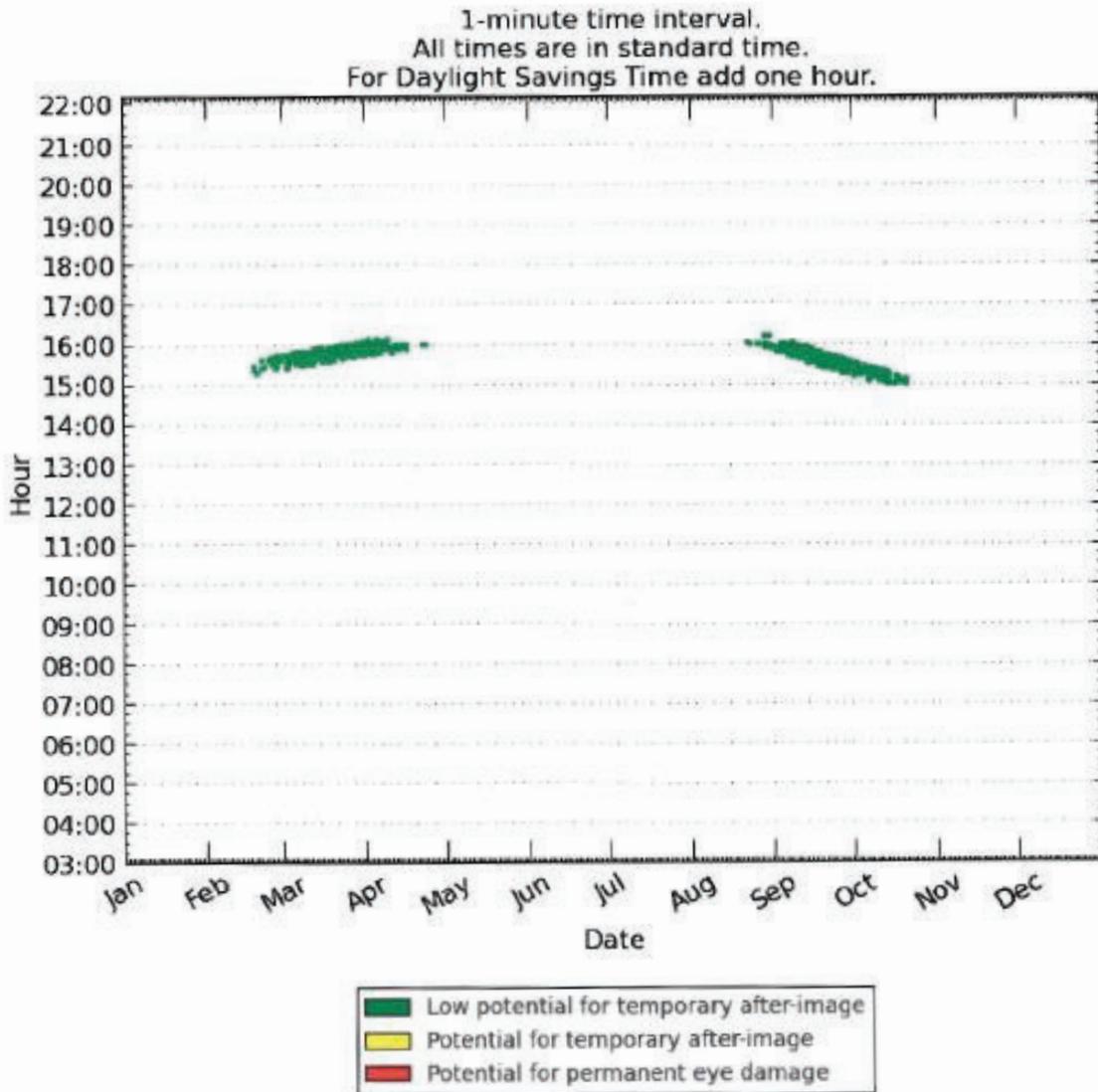


Figure 3.4-5: SGHAT ANALYSIS

### 3.4.2.5 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was significant related to airspace management and use if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CRR 15000 et seq.), and standards of professional practice.

A project could have a significant adverse effect on airspace management and use if it would:

- Affect the current use or mission-oriented use of airspace because of glint and glare from project-related solar panels;
- Be located within the adopted Kern County Airport Land Use Compatibility Plan and would result in a safety hazard for people residing or working in the project area;
- Be located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area; or
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

## 3.4.3 Analysis of Environmental Effects

### 3.4.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

#### ***NEPA: Environmental Impacts***

The assessment of impact of the Proposed Action on the use and management of airspace in the area is based on analysis of all available information using the three different assessment methods described in Section 3.4.4.

#### **Air Space Penetration**

The tallest structures proposed for this project are the gen-tie line poles, which may be up to 200 feet in height. The FAA regulates structures taller than 200 feet according to FAA Regulations 14 CFR Part 77.13. The gen-tie line may be constructed within Influence Zones D, E1, and E2 of the Mojave Air and Space Port. When compared to Zones D and E2, Zone E1 has the lowest height limit, which is 100 feet as identified in Section 4.9.5 of the ALUCP. The proposed gen-tie poles would exceed the 100-foot height limit for structures in Zone E1. However, as previously discussed, the ALUCP provides an exemption to these height requirements for gen-tie lines. Therefore, construction and operation of the Proposed Action would not result in adverse effects related to any physical airspace penetration.

#### **Communication System Interference**

Communication systems interference includes negative impacts on radar, navigational aids (NAVAIDS), and infrared instruments. Radar interference occurs when objects are placed too close to a radar antenna and reflect or block the transmission of signals between the radar antenna and the receiver (either a plane or a remote location). Although it is possible for interference to be caused by other communication signals, more commonly it is caused by a physical structure placed between the transmitter and the receiver. NAVAIDS can be impacted similarly as radar, but they include passive systems with no transmitting signals.

1 Studies conducted during proposed project siting identified the locations of radar transmission and  
2 receiving facilities and other NAVAIDS on Edwards AFB. These studies determined locations that  
3 would not be suitable for proposed structures based on their potential to either block, reflect, or  
4 disrupt radar signals (Air Force Real Property Agency, 2007). The proposed project is within 1.5  
5 miles of Pontius Airport (a private airstrip), approximately 5.3 miles from the Mojave Air and  
6 Space Port, and 9 miles from the Edwards AFB airport facilities. Due to the nature of their low  
7 profiles, solar PV systems typically represent little risk of interfering with radar transmissions since  
8 there are no radar facilities nearby. There are no communication facilities operating in the area  
9 being considered for the Proposed Action. Though adverse effects are not anticipated to occur,  
10 coordination of frequency and notification would ensure impacts would not occur with  
11 implementation of Mitigation Measure MM 3.4-1a.

## 12 **FAA Airport Glint and Glare Assessment**

13 As previously noted in Section 3.4.4, solar panels have been installed at several airports and reviews  
14 by the FAA indicate that these facilities have not affected the performance of pilots in landing and  
15 takeoff (FAA, 2010; Spaven Consulting, 2011).

16 Table 3.4-1 presents a summary of solar projects on or adjacent to airports around the world  
17 (Spaven Consulting, 2011). Many of these projects are located in states with very high duration and  
18 intensity of sunlight, similar to conditions at Edwards AFB.

19 PV cells using technologies similar to those proposed on the site routinely operate near glare-  
20 sensitive locations such as airports. However, glare resulting from the placement of these panels  
21 has not been a concern for pilots or other airport users (FAA, 2010).

22 It is reasonable to infer that solar panels at the project site would not impact pilot performance at  
23 Edwards AFB and would not require any changes in the existing use of airspace over Edwards AFB  
24 and that there would likely be no impact on management of airspace over Edwards AFB as  
25 Restricted Area R-2515.

## 26 **Air Force Glint and Glare Assessment**

27 The Air Force conducted numerous tests to determine if reflections from the solar PV panels on  
28 Nellis AFB would affect pilot performance. After several such tests, the Air Force concluded that  
29 glare and glint from solar panels did not affect the performance of pilots in their training missions.  
30 It was concluded that in the worst possible case, there was a slight potential for an “after image or  
31 flash glare” which was similar to the risk from reflections from water and less than that from snow  
32 or white concrete. An Environmental Assessment for the construction and operation of the solar  
33 farm at Nellis AFB (USAF, 2011) concluded that “reflectivity from solar panels would be no  
34 greater than weathered white concrete and would not increase glare on aviators approaching or  
35 departing the airfield.” The Finding of No Significant Impact (FONSI) indicated that no adverse  
36 effects relating to safety would occur. The use of airspace over Nellis AFB was not impacted by  
37 operation of the 14 MW solar facility (USAF, 2011).

1 The experience of Air Force pilots conducting operations over a solar power generation project at  
2 Nellis AFB suggests that there would be little, if any, impact on the use of airspace over Edwards  
3 AFB as a result of the Proposed Action.

#### 4 **Potential Impacts at Edwards AFB**

5 To date, the Air Force has not received any complaints from its pilots about the three 1 MW solar  
6 power facilities operating at Edwards AFB. As discussed in Section 3.4.4, results of the SGHAT  
7 analysis for the Proposed Action indicate a low potential for temporary after-image or glint/glare  
8 during the spring and fall months and between 1500 and 1600 hours. Pilots are directed to report  
9 perceived or actual flight risks to the installation safety officer and subsequently to the Air Force  
10 Flight Safety. The Air Force Safety Center has no documented glint/glare reports from any active  
11 duty, guard, or reserve flight operations.

#### 12 **CEQA: Impact Significance Determination**

13 **Impact 3.4-1: The project would be located within the adopted Kern County Airport Land**  
14 **Use Compatibility Plan, result in a safety hazard for people residing or working in the project**  
15 **area.**

16 The proposed solar facility would be located approximately 5 miles from the Mojave Air and Space  
17 Port and 7 miles from the Edwards AFB airport facilities. The proposed solar facility would be  
18 located outside of the Mojave Air and Space Port Influence Zone. At the nearest point, the proposed  
19 route options for the gen-tie line would pass within approximately 1.5 miles of the Mojave Air and  
20 Space Port. Depending on the final route, the gen-tie line may be constructed within Influence  
21 Zones D, E1, and E2 of the Mojave Air and Space Port. Section 4.9.5 of the ALUCP defines policies  
22 associated with the Mojave Air and Space Port, including requirements regarding the height of  
23 proposed structures as well as certain land use characteristics, such as glare. As described in  
24 Chapter 2, *Proposed Action, Project Description, and Alternatives*, poles associated with the gen-  
25 tie line may be up to 180 feet tall, which would exceed the 100-foot height limit for structures in  
26 Zone E1. However, as previously discussed, the ALUCP provides an exemption to these height  
27 requirements for gen-tie lines. Therefore, the gen-tie line would not be inconsistent with the  
28 ALUCP and is not expected to result in a safety hazard.

29 Section 1.7.1 of the ALUCP requires that, prior to approval of any type of land use development,  
30 findings shall be made that such development is compatible with training and operational missions  
31 of relevant military operations. Section 4.17.3 of the ALUCP requires notification of construction  
32 of the project to China Lake Naval Air Weapons Station and Edwards AFB. The Air Force, as lead  
33 agency for the NEPA action, is aware of the proposed project and its relation to military operations  
34 on Edwards AFB and China Lake Naval Air Weapons Station; therefore, the proposed project  
35 would be consistent with the military notification requirements of the ALUCP and multi-  
36 agency/service Notice to Airmen (NOTAM) program.

37 Furthermore, the proposed project would not result in an increase in air traffic levels or a change  
38 in location of air traffic patterns that would result in a substantial safety risk, as air traffic patterns  
39 would not be affected (the only mode of transport affected by the proposed project is  
40 automobile/truck operations). In addition, as previously discussed, the proposed solar panels would

1 be composed of anti-reflective material; therefore, glare resulting from the panels is not expected  
2 to be a concern for pilots. For the reasons described above the proposed project would not result in  
3 safety or operational hazards to aircraft that would represent a safety hazard to people residing or  
4 working in the area. In addition, the nature of operation of the solar facilities is not known to result  
5 in any operational issues or safety hazards to aircraft that would be a safety hazard to people.  
6 Implementation of Mitigation Measures MM 3.4-1a and MM 3.4-2a for the solar facility portion  
7 of the project, as well as Mitigation Measure MM 3.4-1b for the gen-tie portion of the project,  
8 would ensure the proposed project would be consistent with the ALUCP and General Plan policies  
9 of Kern County by requiring the developer to coordinate with DoD and obtain approval from FAA  
10 and the public airports and military installations in the area. Impacts would be less than significant.

#### 11 **Mitigation Measures**

12 Implement Mitigation Measures MM 3.4-1a, MM 3.4-2a, and MM 3.4-1b (see Section 3.4.5 for  
13 mitigation measures).

#### 14 **Level of Significance after Mitigation**

15 Impacts would be less than significant.

#### 16 **Impact 3.4-2: The project would be located within the vicinity of a private airstrip and could 17 result in a safety hazard for people residing or working in the project area.**

18 The solar facility would be located within 2 miles of Pontius Airport, a private airstrip. However,  
19 as described in Section 3.10, *Infrastructure*, of this EIS/EIR, the operation of solar facility would  
20 not be expected to result in any operational issues or safety hazards related to airport operations.  
21 Therefore, the proposed solar facility would not result in safety hazards for people residing or  
22 working in the project area with respect to the project's proximity to a private airstrip. The solar  
23 facility would comply with all applicable safety standards and guidelines for airports and air fields;  
24 impacts would be less than significant.

#### 25 **Mitigation Measures**

26 No mitigation measures are required.

#### 27 **Level of Significance after Mitigation**

28 Impacts would be less than significant.

#### 29 **Impact 3.4-3: The project would not result in a change in air traffic patterns, including 30 either an increase in traffic levels or a change in location that results in substantial safety 31 risks.**

32 As discussed in this section, existing utility-scale solar power plants in the project vicinity have not  
33 affected air traffic patterns associated with Edwards AFB or other surrounding airports. As  
34 described, the proposed project is not expected to result in physical obstruction to air traffic and  
35 glare from sunlight reflected from the proposed project PV panels is not expected to result in  
36 impacts to pilots. In addition, the proposed project would not result in an increase in air traffic  
37 levels that would result in a substantial safety risk, as air traffic levels would not be affected (i.e., the  
38 only mode of transport affected by the proposed project is automobile/truck operations). Therefore,  
39 impacts related to a change in air traffic patterns and air traffic levels would be less than significant.

1 **Mitigation Measures**

2 No mitigation measures are required.

3 **Level of Significance after Mitigation**

4 Impacts would be less than significant.

5 **3.4.3.2 Alternative B: 1,500-Acre EUL**

6 ***NEPA: Environmental Impacts***

7 **Air Space Penetration**

8 Like Alternative A, the gen-tie line poles would be the tallest structures constructed under  
9 Alternative B, which may be up to 180 feet in height. In addition, the Alternative B gen-tie route  
10 options are in the same location as proposed under Alternative A. Therefore, Alternative B impacts  
11 concerning air space penetration would be the same identified for Alternative A. Specifically, the  
12 gen-tie line may be constructed within Influence Zones D, E1, and E2 of the Mojave Air and Space  
13 Port. Zone E1 has the lowest height limit, which is 100 feet. The Alternative B gen-tie poles would  
14 exceed the 100-foot height limit for structures in Zone E1. However, the ALUCP provides an  
15 exemption to these height requirements for gen-tie lines. Therefore, construction and operation of  
16 Alternative B would not result in impacts related to any physical airspace penetration.

17 **Communication System Interference**

18 Because the Alternative B solar facility would be located within the same solar facility boundary  
19 as Alternative A, impacts involving communication system interference would be the same as  
20 identified for Alternative A. The Alternative B solar facility and gen-tie line are not located in areas  
21 that have the potential to either block, reflect, or disrupt radar signals (Air Force Real Property  
22 Agency, 2007). Due to the nature of their low profiles, solar PV systems typically represent little  
23 risk of interfering with radar transmissions when there are no radar facilities nearby. There are no  
24 communication facilities operating in the area being considered for Alternative B. Though impacts  
25 are not anticipated to occur, coordination of frequency and notification would ensure impacts would  
26 not occur for the solar facility portion of the project with implementation of Mitigation Measure  
27 MM 3.4-1a.

28 **FAA Airport Glint and Glare Assessment**

29 Alternative B would use the same PV solar technology as Alternative A, but would result in  
30 substantially fewer PV panels installed at the solar facility site. PV cells using technologies similar  
31 to those proposed under Alternatives A and B routinely operate near glare-sensitive locations such  
32 as airports. Glare resulting from the placement of these panels has not been a concern for pilots or  
33 other airport users (FAA, 2010). It is reasonable to infer that solar panels at the project site would  
34 not impact pilot performance at Edwards AFB and would not require any changes in the existing  
35 use of airspace over Edwards AFB. There would likely be no impact on management of airspace  
36 over Edwards AFB as Restricted Area R-2515.

37 **Air Force Glint and Glare Assessment**

38 Like Alternative A, Alternative B would use a PV solar technology to generate electricity.  
39 However, Alternative B would result considerably fewer solar panels installed at the solar facility

1 site. As discussed under Alternative A, the Air Force concluded that glare and glint from solar  
2 panels did not affect the performance of pilots in their training missions. It was concluded that in  
3 the worst possible case, there was a slight potential for an “after image or flash glare” which was  
4 similar to the risk from reflections from water and less than that from snow or white concrete. There  
5 would likely be little to no impact on the use of airspace over Edwards AFB as a result of  
6 Alternative B.

#### 7 **Potential Impacts at Edwards AFB**

8 Results of the SGHAT analysis for Alternative A are applicable to Alternative B because  
9 Alternative B consists of the same PV solar technology constructed within the same solar facility  
10 location. However, Alternative B would result in considerably fewer solar panels installed at the  
11 solar facility site. The SGHAT analysis indicated a low potential for temporary after-image or  
12 glint/glare during the spring and fall months and between 1500 and 1600 hours. Pilots are directed  
13 to report perceived or actual flight risks to the installation safety officer and subsequently to the Air  
14 Force Flight Safety. The Air Force Safety Center has no documented glint/glare reports from any  
15 active duty, guard, or reserve flight operations. Thus, it is likely that Alternative B would have little  
16 to no impact involving glint/glare.

#### 17 **CEQA: Impact Significance Determination**

18 Like Alternative A, Alternative B would be required to implement Mitigation Measures MM 3.4-  
19 1a and MM 3.4-2a for the solar facility portion of the project, as well as Mitigation Measure MM  
20 3.4-1b for the gen-tie portion of the project, to ensure the proposed project would be consistent  
21 with the ALUCP and General Plan policies of Kern County by requiring the developer to coordinate  
22 with DoD and obtain approval from FAA and the public airports and military installations in the  
23 area. Under Alternative B, the number of solar PV panels to be constructed would be less than the  
24 number of panels to be used in Alternative A. Because there would be fewer panels and thus a  
25 smaller area from which sunlight could be reflected, glare and glint from the solar panels would be  
26 reduced. However, considering that the solar panels are not expected to affect pilot performance or  
27 existing air traffic patterns or levels, impacts related to these topics are expected to be similar to  
28 Alternative A and would be less than significant.

#### 29 **Mitigation Measures**

30 Implement Mitigation Measures MM 3.4-1a, MM 3.4-2a, and MM 3.4-1b (see Section 3.4.5 for  
31 mitigation measures).

#### 32 **Level of Significance after Mitigation**

33 Impacts would be less than significant.

### 34 **3.4.3.3 Alternative C: No Action/No Project**

#### 35 **NEPA: Environmental Impacts**

36 Under this alternative, none of the components proposed under Alternative A would be built. The  
37 management of airspace over Edwards AFB for testing purposes would continue at present, as  
38 described in Section 3.4.1.2. The No Action Alternative would not change the configuration or

1 management of airspace. Therefore, implementing Alternative C would not affect airspace  
2 management and use over Edwards AFB.

### 3 **CEQA: Impact Significance Determination**

4 Under this alternative, none of the components proposed under Alternative A would be built. If  
5 Alternative C were implemented, there would be no changes to onsite conditions; therefore,  
6 Alternative C would result in no impacts related to consistency with the ALUCP and air safety  
7 hazards.

### 8 **Mitigation Measures**

9 No mitigation measures are required.

### 10 **Level of Significance after Mitigation**

11 No impact.

## 12 **3.4.4 Cumulative Impact Analysis**

### 13 **3.4.4.1 NEPA: Cumulative Environmental Effects and Their** 14 **Significance**

15 The geographic scope of the cumulative analysis with respect to airspace management and use  
16 would encompass all projects within the Joint Service Restricted R-2508 Complex and the Mojave  
17 Air and Space Port's influence area. The R-2508 Complex encompasses 20,000 square miles, with  
18 3,000 square miles in Kern County. Thus, all past, present and reasonably foreseeable projects  
19 within this geographical area are within the project's cumulative scenario for airspace management  
20 and use. The projects located in Los Angeles County, as identified on Figure 3.4-1, are not within  
21 the R-2508 Complex and therefore outside of the geographic scope of the cumulative analysis.

22 The project, as well as the whole of Edwards AFB, is also located within the Restricted Area  
23 R-2515 Complex, which is a part of the larger R-2508 Complex. The Environmental Assessment  
24 for the proposed amendment to Restricted Area R-2515 Complex is complete and will be under  
25 contract soon. The amendment will allow for the consolidation of multiple flight training routes,  
26 the addition of a new route, and the introduction of new weapons systems such as the F-35 and  
27 multiple unmanned aerial systems. The amendment to the Restricted Area R-2515 Complex is a  
28 reasonably foreseeable project within the geographic scope of the cumulative analysis for the  
29 proposed action.

30 In addition to the Proposed Action's gen-tie line options, several other reasonably foreseeable  
31 projects would be located within the Mojave Air and Space Port's influence area. These projects  
32 include (see Table 3.4-1 and Figure 3.4-1 for location):

- 33 • RE Columbia
- 34 • RE Columbia 2
- 35 • RE Columbia 3
- 36 • High Desert Solar
- 37 • Mojave Solar Park by Cal West

1 Impacts of the Proposed Action could be cumulatively considerable if they would have the potential  
2 to combine with similar impacts of other past, present, or reasonably foreseeable projects to result  
3 in a significant cumulative effect. However, as discussed above, the Proposed Action would not  
4 impact the existing use of airspace over Edwards AFB or within the R-2508 or R-2515 Complexes  
5 and would not create a safety hazard for the Mojave Air and Space Port, and therefore would not  
6 have the potential to combine with impacts from other projects to pose a hazard to air navigation.  
7 Furthermore, implementation of Mitigation Measures MM 3.4-1a and MM 3.4-2a for the solar  
8 facility portion of the project, as well as Mitigation Measure MM 3.4-1b for the gen-tie portion of  
9 the project, would require the developer to coordinate with DoD to avoid potential conflicts with  
10 military communications and obtain approval from FAA and the public airports and military  
11 installations in the area to ensure that the project would not adversely affect the mission of the  
12 existing airspace or military installations. Therefore, the Proposed Action would not result in  
13 adverse cumulative effects to airspace.

#### 14 **3.4.4.2 CEQA: Cumulative Impact Significance Determination**

15 Cumulative impacts as they relate to CEQA would be less than significant with mitigation  
16 incorporated.

#### 17 **Mitigation Measures**

18 Implement Mitigation Measures MM 3.4-1a, MM 3.4-2a, and MM 3.4-1b (see Section 3.4.5 for  
19 mitigation measures).

#### 20 **Level of Significance after Mitigation**

21 Cumulative impacts would be less than significant.

### 22 **3.4.5 Mitigation Measures**

23 The potential electronic interference caused by control and transmission equipment for the facility  
24 can be mitigated through coordination with the appropriate Frequency Management Office.

#### 25 **3.12.5.1 Solar Facility Mitigation Measures**

26 **MM 3.4-1a: Frequency Management.** Prior to the operation of the solar facility, the developer  
27 shall consult with the Air Force to identify the appropriate Frequency Management Office  
28 personnel to coordinate the use of telemetry to avoid potential frequency conflicts with military  
29 operations.

30 **MM 3.4-2a: Federal Aviation Administration Notification.** Prior to issuance of building  
31 permits:

- 32 1. The developer shall submit Form 7460-1 (Notification of Proposed Construction or  
33 Alteration) to the Federal Aviation Administration, in the form and manner prescribed in  
34 Code of Federal Regulation 77.17;
- 35 2. The developer shall also provide documentation to Air Force demonstrating that the  
36 Federal Aviation Administration has issued a “Determination of No Hazard to Air  
37 Navigation.” This documentation shall include written concurrence from the military

1 authority responsible for operations in the flight area depicted in the Kern County Zoning  
2 Ordinance Figure 19.08.160 that all project components in the flight area would create no  
3 significant military mission impacts.

4 3. The developer shall also provide documentation to Air Force demonstrating that a copy of  
5 the approved form(s) has been provided to the operators of Mojave Air Space and Port.

### 6 **3.12.5.2 Gen-tie Mitigation Measures**

7 **MM 3.4-1b: Federal Aviation Administration Notification.** Prior to issuance of grading or  
8 building permits for generation tie-line installation:

9 1. The developer shall submit Form 7460-1 (Notification of Proposed Construction or  
10 Alteration) to the Federal Aviation Administration, in the form and manner prescribed in  
11 Code of Federal Regulation 77.17 for the gen-tie towers;

12 2. The developer shall also provide documentation to the Kern County Planning and Natural  
13 Resources Department demonstrating that the Federal Aviation Administration has issued  
14 a “Determination of No Hazard to Air Navigation” For the gen-tie towers. This  
15 documentation shall include written concurrence from the military authority responsible  
16 for operations in the flight area depicted in the Kern County Zoning Ordinance Figure  
17 19.08.160 that all project components in the flight area would create no significant military  
18 mission impacts.

19 3. The developer shall also provide documentation to the Kern County Planning and Natural  
20 Resources Department demonstrating that a copy of the approved form(s) has been  
21 provided to the operators of Mojave Air Space and Port.

### 22 **3.4.6 Residual Impacts after Mitigation**

23 There would be no impact on airspace use over Edwards AFB and, therefore, there would be no  
24 potential for residual impacts to occur after mitigation.



## 3.5 Biological Resources

### 3.5.1 Affected Environment

This section of the EIS/EIR describes the affected environment for biological resources in the proposed project area, including the regulatory and environmental settings.

The analysis presented in this section of the EIS/EIR is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys. The literature review included information available in peer-reviewed journals, standard reference materials, and relevant databases on sensitive resource occurrences including the California Natural Diversity Database (CNDDB) and California Native Plant Society's (the CNPS) Online Inventory of Rare and Endangered Plants, (CDFW, 2013a; CDFW, 2017; CDFW, 2018a; CNPS, 2013; CNPS, 2017; CNPS, 2018), as well as the 2015 Integrated Natural Resources Management Plan (INRMP), Edwards Air Force Base (AFB), California (EAFB, 2017) and other recent reports from projects within the region, including the project-specific reports by ECORP (2013; Appendix B4), Dudek (2018a; Appendix B4, 2018b; Appendix B18), and Brylski (2018a, 2018b; Appendix B21). Other sources of information reviewed included aerial photographs, topographic maps, soil survey maps, climatic data and project plans.

Project specific vegetation community mapping is described in Appendix B4 (Dudek 2018a; ECORP 2013). Project specific surveys including protocol desert tortoise and burrowing owl surveys conducted within Enhanced Use Lease (EUL) Study Area are described in Appendix B4 (ECORP, 2013). Project specific surveys including protocol special-status plants, desert tortoise and Swainson's hawk surveys conducted within the Gen-Tie Study Area are described in Appendix B4 (Dudek 2018a; Appendix B4). Additional information on Mohave ground squirrel survey efforts on Edwards AFB is described in Mohave Ground Squirrel Habitat Assessment Edwards Air Force Base Solar Project (Brylski, 2018a; Appendix B21). This analysis also relies on the findings of the Sunlight Partners Solar Array Project Approved Jurisdictional Determination (USACE 2013; Appendix B18) and jurisdictional delineations conducted by Dudek within 3,032 acres of the EUL Study Area in 2017 and 2018 (Dudek 2018b; Appendix B18).

#### 3.5.1.1 Scoping Issues Addressed

The following scoping comments related to biological resources were provided during the scoping process by federal agencies (U.S. Environmental Protection Agency [USEPA] and U.S. Fish and Wildlife Service [USFWS]), the Lahontan Regional Water Quality Control Board (RWQCB), the California State Lands Commission, the California Department of Fish and Wildlife (CDFW), and organizations (Sierra Club, Center for Biological Diversity, Kern Audubon Society, Desert Tortoise Council, and National Public Lands News).

#### ***General Biological Resources (General Comments, Vegetation Resources, and Wildlife Resources)***

##### **General Comments**

- Biological surveys should be conducted at appropriate times of the year.

- 1 • Preliminary biological assessments of the proposed project area and a 0.50-mile buffer  
2 should be conducted.
- 3 • Seasonal surveys should be performed for special-status plant species and sensitive  
4 vegetation communities.
- 5 • Rare resources have a high probability of occurring onsite and should be avoided where  
6 possible, and potential effects on them should be analyzed.
- 7 • Mitigation measures should be included for desert tortoise, Mohave ground squirrel,  
8 raptors, and vegetation and water impacts.
- 9 • CDFW, USFWS, Bureau of Land Management (BLM), and California Energy  
10 Commission (CEC) should be consulted in order to properly analyze potential impacts to  
11 biological resources, and appropriate mitigation measures should be provided.
- 12 • Detailed species and habitat biological impact statements and mitigation measures should  
13 be included, especially with regard to grebes, ravens, migratory birds, bats, desert tortoises,  
14 and other protected species as well as desert biodiversity and invasive species.
- 15 • New activities that will result in surface disturbance and construction of, or modification  
16 to, structures and facilities.
- 17 • The latest version of the CNDDDB should be accessed to determine what rare plant and  
18 animal species may be impacted by the project.
- 19 • The relationship between the project and the latest Integrated Resources Management Plan  
20 should be clarified.
- 21 • An offsite alternative to address the residual habitat impacts of surface disturbance should  
22 be considered.
- 23 • The CDFW states that, if approved, the project would be subject to Fish and Game Code  
24 filing fees.
- 25 • Any special-status species or natural communities detected during the project surveys  
26 should be reported to the CNDDDB.

### 27 **Vegetation Resources**

- 28 • Existing conditions in the project areas with natural vegetation should be included in the  
29 Affected Environment section and changes to current natural vegetation in the  
30 Environmental Effects section.
- 31 • Impacts associated with trimming perennial shrubs to 2 to 3 inches could likely cause  
32 mortality within the species populations and should be evaluated.
- 33 • Vegetation trimming associated with installation of solar panels could favor the spread of  
34 non-native species throughout the area.
- 35 • Habitat fragmentation of intact, ecologically functioning communities, especially with  
36 regard to enabling invasive species spread, should be considered.
- 37 • Native vegetation should be preserved as much as possible.

1 **Wildlife Resources**

- 2 • Transmission lines should be designed with bird friendly guidelines
- 3 • Poles should be designed to minimize the impact on wildlife that could result from  
4 increased predator perching surfaces, collision, and confusion.
- 5 • Collisions of migratory birds with solar panels and transmission lines, especially for the  
6 grebes, may occur. The Avian Power Line Interaction Committee should be referenced  
7 when designing aboveground electrical lines.
- 8 • A special-use permit from the USFWS should be obtained before any migratory bird  
9 carcasses are collected to prevent violation of the Migratory Bird Treaty Act of 1918  
10 (MBTA).
- 11 • An avian and bat conservation strategy that involves adaptive management and monitoring  
12 should be developed for the project.
- 13 • The impacts of reduced habitat on migratory birds should be analyzed. Mitigation measures  
14 for the unavoidable loss of migratory bird habitat should be implemented, and may include  
15 contributing to a fund or being involved in a joint venture to prevent migratory bird  
16 mortality.
- 17 • The impacts of new lighting on birds and bats should be analyzed and appropriately  
18 mitigated.
- 19 • A monitoring plan should be developed to quantify the impact of solar facilities on bat  
20 populations, which often mistakenly perceive solar panels as water sources.

21 ***Special-Status Biological Resources (Special-Status Plants and Wildlife,***  
22 ***Sensitive Habitats)***

23 **General Comments**

- 24 • The relationship between the project and the Desert Renewable Energy Conservation Plan  
25 (DRECP) should emphasize that the DRECP is not relevant since the project does not  
26 include BLM-managed lands.

27 **Special-Status Plants**

- 28 • Rare plants should be avoided because of the lack of success in transplanting them.
- 29 • If avoidance is not feasible, then a Vegetation Salvage and Management Plan should be  
30 prepared.

31 **Special-Status Wildlife**

- 32 • Agassiz's desert tortoise populations, as well as populations of other special-status species  
33 should be included in the Affected Environment section.
- 34 • Populations of Agassiz's desert tortoise, Mohave ground squirrel, burrowing owl, and other  
35 rare plant and animal species of concern should be included in the Environmental Effects  
36 section.

- 1 • Anticipated change in use of the area by common ravens and other predators of desert  
2 tortoise should be included in the Environmental Effects section.
- 3 • A less densely populated desert tortoise location should be considered for project  
4 development.
- 5 • Any existing data demonstrating success of desert tortoise reintroduction should be  
6 discussed.
- 7 • The proposed project could result in an increase in common ravens that prey on desert  
8 tortoises. A specific management plan for common ravens in the project vicinity should be  
9 developed that focuses on minimization of raven subsidies.
- 10 • The project should contribute to the Regional Common Raven Management Program.
- 11 • The project should consider getting an incidental take permit for listed species such as  
12 desert tortoise, Mohave ground squirrel, and Swainson's hawk and/or mitigate for impacts  
13 to loss of habitat.
- 14 • Pre-construction surveys should be conducted for desert kit fox. If necessary, a passive  
15 relocation and excavation plan should be prepared. Perimeter fencing should be  
16 constructed to facilitate movement.
- 17 • The project should follow the requirements of the USFWS Standardized Recommendation  
18 for Protection of the Endangered San Joaquin Kit Fox Prior to and During Ground  
19 Disturbance (USFWS, 2011).
- 20 • Pre-construction surveys for burrowing owl should be conducted and, if necessary, a  
21 Burrowing Owl Exclusion Plan shall be developed. The project proponent should mitigate  
22 for the modification or removal of burrowing owl habitat.
- 23 • Pre-construction surveys should be conducted for golden eagle and the project proponent  
24 should mitigate for the modification or removal of golden eagle habitat.
- 25 • Project construction should occur outside of the bird breeding season, if feasible. If the  
26 project takes place during the bird breeding season, a pre-construction survey should occur  
27 and buffers and monitoring terms established.
- 28 • Towers should be of monopole design to reduce bird collisions.
- 29 • Hollow vertical structures should be capped after installation to prevent bird entrapment.
- 30 • To prevent desert kit fox and desert tortoise impacts, basins should be designed to prevent  
31 access by terrestrial wildlife.
- 32 • Active trenches, holes, and other excavations should be inspected and covered at the end  
33 of the day until the excavations are backfilled.
- 34 • Perimeter fencing should be installed so that the bottom of the fencing material is at least  
35 10 inches from the ground surface.

### 36 **Sensitive Habitats**

- 37 • All direct impacts to sensitive habitats should be included.

- 1 • A Joshua tree mitigation measure needs to be tied into the analysis.
- 2 • “Islands” of Joshua trees resulting from the project may not be suitable in the long term.
- 3 • Joshua tree woodlands should be carefully accounted for to protect their diminishing
- 4 habitat.
- 5 • Streambed alteration and/or discharge of fill material to a surface water may require a
- 6 Section 401 permit or dredge and fill waste discharge requirements for impacts to non-
- 7 federal waters—both issued by the Lahontan Water Board.
- 8 • A Streambed Alteration Agreement from CDFW may be required.
- 9 • A comprehensive jurisdictional delineation to identify all streams should be conducted.
- 10 • A hydrology study should be prepared.
- 11 • Blockages of crucial ecological process areas and/or habitat connectivity (on both larger
- 12 and finer scales) should be evaluated. Edwards AFB should be evaluated to determine
- 13 where important ecological processes and habitat connectivity areas occur.
- 14 • Habitat connectivity within Edwards AFB should be identified.
- 15 • Fencing for the project site must consider the movement of migratory species in the area.
- 16 • Effects on wildlife movement should be analyzed with regard to corridors, habitat
- 17 suitability, and dispersal distances.

18 The following comments related to biological resources were received during the scoping period  
19 but are not addressed in this section of the EIS/EIR for the reasons cited below.

### 20 **Vegetation Resources**

- 21 • Vegetation/wetland habitat maps should be at a half-acre minimum mapping unit scale.
- 22 Edwards AFB has conducted recent and extensive vegetation mapping in support of the
- 23 INRMP, which was used for this document and is sufficient for the analysis, but was not
- 24 conducted at the scale requested.

### 25 **Special-Status Wildlife**

- 26 • Longitudinal studies regarding the habitat of Swainson’s hawk in the project area should
- 27 be conducted. CDFW protocol surveys for the species were conducted and are adequate
- 28 for this analysis.
- 29 • Desert Tortoise populations at Edwards AFB should be analyzed over-time to assess
- 30 population trends

## 31 **3.5.1.2 Regulatory Framework**

### 32 ***Federal***

#### 33 **Endangered Species Act of 1973 (USC, Title 16, Sections 1531 through 1543)**

34 The Federal Endangered Species Act (ESA) of 1973 (16 U.S. Code [USC] Section 1531 et seq.)  
35 provides for the conservation of endangered and threatened species listed pursuant to Section 4 of  
36 the Act (16 USC Section 1533) and the ecosystems upon which they depend. Under the federal

1 Endangered Species Act, species may be listed as either endangered or threatened. “Endangered”  
2 means a species is in danger of extinction throughout all or a significant portion of its range.  
3 “Threatened” means a species is likely to become endangered within the foreseeable future.

4 The ESA also provides a program for the conservation and recovery of threatened and endangered  
5 species as well as the conservation of designated critical habitat that USFWS determines is required  
6 for the survival and recovery of these listed species.

7 Section 7 of the ESA requires federal agencies, in consultation with and assistance from the  
8 Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they  
9 authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or  
10 endangered species or result in the destruction or adverse modification of critical habitat for these  
11 species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for  
12 administering the ESA. Regulations governing interagency cooperation under Section 7 are found  
13 in Title 50 of the Code of Federal Regulation (CFR) Part 402. The Biological Opinion issued by  
14 USFWS or NMFS at the conclusion of formal consultation will include an Incidental Take  
15 Statement (ITS) exempting “take” (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) that may  
16 occur incidental to an otherwise legal activity.

17 Section 9 lists those actions that are prohibited under the ESA. Although take of a listed species is  
18 prohibited, a take is exempt from the Section 9 prohibition when it is incidental to an otherwise  
19 legal activity and is in compliance with the terms of the ITS. Section 9 prohibits take of listed  
20 species of fish, wildlife, and plants without special exemption. The definition of “harm” includes  
21 significant habitat modification or degradation that results in death or injury to listed species by  
22 significantly impairing behavioral patterns related to breeding, feeding, or shelter. “Harass” is  
23 defined as actions that create the likelihood of injury to listed species by disrupting normal  
24 behavioral patterns related to breeding, feeding, and shelter significantly.

25 Section 10 provides a means whereby a nonfederal action with the potential to result in take of a  
26 listed species can be allowed under an incidental take permit. Application procedures are found at  
27 50 CFR Parts 13 and 17 for species under the jurisdiction of USFWS and 50 CFR Parts 217, 220,  
28 and 222 for species under the jurisdiction of NMFS.

29 Section 4(a)(3) and (b)(2) of the ESA requires the designation of critical habitat to the maximum  
30 extent possible and prudent based on the best available scientific and commercial data and after  
31 considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A)  
32 of the ESA: (1) areas within the geographic range of a species that are occupied by individuals of  
33 that species and contain the primary constituent elements (physical and biological features)  
34 essential to the conservation of the species, thus warranting special management consideration or  
35 protection; and (2) areas outside of the geographic range of a species at the time of listing but that  
36 are considered essential to the conservation of the species.

37 **Bald and Golden Eagle Protection Act of 1940 (16 USC 668, enacted by 54 Stat. 250)**

38 The Bald and Golden Eagle Protection Act of 1940 protects bald and golden eagles by prohibiting  
39 the taking, possession, and commerce of such birds and establishes civil penalties for violation of

1 this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill,  
2 capture, trap, collect, molest or disturb.” (Title 16 of the U.S. Code [USC] Section 668c). Disturb  
3 means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based  
4 on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity,  
5 by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest  
6 abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.  
7 (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3). ).

#### 8 **Migratory Bird Treaty Act (16 USC 703 through 711)**

9 The Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series  
10 of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and  
11 the former Soviet Union that provide for international migratory bird protection. The MBTA  
12 authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides  
13 that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory  
14 bird, or any part, nest or egg of any such bird...” (16 USC Section 703). The current list of species  
15 protected by the MBTA includes several hundred species and essentially includes all native birds.  
16 Permits for take of nongame migratory birds can be issued only for specific activities, such as  
17 scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human  
18 health and safety and personal property. The MBTA requires that project-related disturbance at  
19 active nesting territories be reduced or eliminated during critical phases of the nesting cycle  
20 (February 1 to August 31, annually) to avoid nest abandonment and/or loss of eggs or young. A  
21 loss of habitat upon which the birds depend could constitute a violation of the MBTA. The MBTA  
22 also precludes take of migratory birds, including their parts, nest, or eggs without a permit.

#### 23 **Clean Water Act (33 USC 1251 through 1376)**

24 The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the  
25 chemical, physical, and biological integrity of the nation’s waters. Section 401 requires a project  
26 operator for a federal license or permit that allows activities resulting in a discharge to waters of  
27 the United States to obtain a Section 401 certification, thereby ensuring that the discharge will  
28 comply with provisions of the CWA. The RWQCBs administer the certification program in  
29 California. Section 402 establishes a permitting system for the discharge of any pollutant (except  
30 dredged or fill material) into waters of the United States. Section 404 establishes a permit program  
31 administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of  
32 dredged or fill material into waters of the United States, including wetlands. USACE implementing  
33 regulations are found at 33 CFR 320 and 330. Guidelines for implementation are referred to as the  
34 Section 404(b)(1) Guidelines, which were developed by EPA in conjunction with USACE (40 CFR  
35 Part 230). The guidelines allow the discharge of dredged or fill material into the aquatic system  
36 only if there is no practicable alternative that would have less adverse impacts.

37 An approved jurisdictional determination was issued by USACE for the Sunlight Partners Solar  
38 Array Project on June 7, 2013 (USACE, 2013). USACE determined that potentially jurisdictional  
39 waters and/or wetlands were assessed within the review area and determined to be not  
40 jurisdictional. A full copy of the Sunlight Partners Solar Array Project Approved Jurisdictional  
41 Determination is provided in Appendix B18. The review area included the Antelope Valley  
42 Watershed excluding the areas of Lake Palmdale and all waters tributary to Lake Palmdale. This

1 review area encompasses the proposed solar facility site and gen-tie route options. The proposed  
2 solar facility site and gen-tie route options are located in an area determined to not be under the  
3 jurisdiction of USACE and would, therefore, not require a Section 404 permit or 401 certification.

#### 4 **Wetlands and Other Waters of the United States**

5 Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities,  
6 are considered sensitive biological resources and can fall under the jurisdiction of several regulatory  
7 agencies. USACE exerts jurisdiction over waters of the United States, including all waters that are  
8 subject to the ebb and flow of the tide; wetlands and other waters such as lakes, rivers, streams  
9 (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal  
10 pools, wet meadows, playa lakes, or natural ponds; and tributaries of the above features. The extent  
11 of waters of the United States is generally defined as that portion that falls within the limits of the  
12 ordinary high-water mark.

13 Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are  
14 defined by USACE as “those areas that are inundated or saturated by surface or groundwater at a  
15 frequency and duration sufficient to support, and that under normal circumstances do support, a  
16 prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b];  
17 40 CFR 230.3[t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and  
18 wetlands hydrology), as determined by field investigation, must be present for a site to be classified  
19 as a wetland by USACE (USACE, 1987).

#### 20 **Sikes Act (16 U.S.C. 670a-670o)**

21 The Sikes Act, as amended by the Sikes Act Improvement Act of 1997 (16 USC 670a–670o),  
22 requires the Department of Defense to manage the natural resources of each military reservation  
23 within the United States and to provide sustained multiple uses of those resources. Air Force  
24 Instruction 32-7064, Integrated Natural Resources Management, provides guidance on how this  
25 requirement is implemented at Air Force installations.

#### 26 **State**

##### 27 **State Lands Commission Significant Lands Inventory**

28 Public Resources Code Section 6370 required the State Lands Commission in the 1970s to  
29 inventory its land holdings and to identify such lands that possess significant environmental values,  
30 including scenic, historic, natural, or aesthetic values of statewide interest. In compliance with this  
31 requirement, the State Lands Commission prepared a report entitled *Inventory of Unconveyed State*  
32 *School Lands and Tide and Submerged Lands Possessing Significant Environmental Values* (1975).

33 Pursuant to Title 2, Division 3, Chapter 1, Article 11, Section 2954 of the California Code of  
34 Regulations, projects that will affect Significant Lands are subject to review under CEQA. In order  
35 to provide permanent protection to environmentally significant values, projects must be designed  
36 to be consistent with the land use classifications assigned under the Significant Lands Inventory  
37 report, potentially through mitigation or alteration of the project.

1 **California Endangered Species Act (California Fish and Game Code 2050 et seq.)**

2 The California Endangered Species Act (CESA) establishes the policy of the state to conserve,  
3 protect, restore, and enhance threatened or endangered species and their habitats. The CESA  
4 mandates that state agencies should not approve projects that would jeopardize the continued  
5 existence of threatened or endangered species if reasonable and prudent alternatives are available  
6 that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For  
7 projects that would affect a listed species under both the CESA and the ESA, compliance with the  
8 ESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is  
9 “consistent” with the CESA under California Fish and Game Code Section 2080.1. For projects  
10 that would result in take of a species listed under the CESA only, the project operator would have  
11 to apply for a take permit under Section 2081(b).

12 **California Fish and Game Code**

13 **Sections 1600 through 1616.** Under these sections of the California Fish and Game Code, the  
14 project operator is required to notify CDFW prior to any project that would divert, obstruct, or  
15 change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a  
16 “stream” is defined as a body of water that flows at least periodically, or intermittently, through a  
17 bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a  
18 watercourse with surface or subsurface flows that supports or has supported riparian vegetation is  
19 a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and  
20 wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry  
21 water during storm events.

22 Preliminary notification and project review generally occur during the environmental process.  
23 When an existing fish or wildlife resource may be substantially adversely affected, CDFW is  
24 required to propose reasonable project changes to protect the resource. These modifications are  
25 formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications,  
26 and bid documents for the project.

27 **Sections 2080 and 2081.** Section 2080 of the California Fish and Game Code states that “No person  
28 shall import into this state [California], export out of this state, or take, possess, purchase, or sell  
29 within this state, any species, or any part or product thereof, that the Commission [State Fish and  
30 Game Commission] determines to be an endangered species or threatened species, or attempt any  
31 of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or  
32 the California Desert Native Plants Act.” Pursuant to Sections 2080.1 or 2081 of the code, CDFW  
33 may authorize individuals or public agencies to import, export, take, or possess state-listed  
34 endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized  
35 through permits or Memoranda of Understanding if the take is incidental to an otherwise lawful  
36 activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent  
37 with any regulations adopted pursuant to any recovery plan for the species, and the project operator  
38 ensures adequate funding to implement the measures required by CDFW, which makes this  
39 determination based on available scientific information and considers the ability of the species to  
40 survive and reproduce.

1 **Sections 3503, 3503.5, 3513, and 3800.** Under these sections of the California Fish and Game  
2 Code, the project operator is not allowed to conduct activities that would result in the taking,  
3 possessing, or destroying of any birds of prey or their nests or eggs; the taking or possessing of any  
4 migratory nongame bird as designated in the MBTA; the taking, possessing, or needlessly  
5 destroying of the nest or eggs of any birds, except as otherwise provided by the Fish and Game  
6 Code or relevant regulations; or the taking of any nongame bird pursuant to California Fish and  
7 Game Code Section 3800.

#### 8 **CEQA Guidelines, Section 15380**

9 Although threatened and endangered species are protected by specific federal and state statutes,  
10 CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of  
11 protected species may be considered rare or endangered if the species can be shown to meet certain  
12 specified criteria. These criteria have been modeled after the definition in ESA and the section of  
13 the California Fish and Game Code dealing with rare or endangered plants or animals. This section  
14 was included in CEQA primarily to deal with situations in which a public agency is reviewing a  
15 project that may have a significant effect on, for example, a candidate species that has not been  
16 listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a  
17 species from the potential impacts of a project until the respective government agencies have an  
18 opportunity to designate the species as protected, if warranted. CEQA also calls for the protection  
19 of other locally or regionally significant resources, including natural communities. Although  
20 natural communities do not at present have legal protection of any kind, CEQA calls for an  
21 assessment of whether any such resources would be affected, and requires findings of significance  
22 if there would be substantial losses. Natural communities listed by CNDDDB as sensitive are  
23 considered by CDFW to be significant resources and fall under the CEQA Guidelines for  
24 addressing impacts. Local planning documents such as general plans often identify these resources  
25 as well.

#### 26 **California Endangered Species Act**

27 The California Endangered Species Act (Fish and Game Code Section 2050 et seq.) requires CDFW  
28 to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental  
29 taking of any such listed species except as allowed by the Act (Sections 2080–2089). In addition,  
30 California ESA prohibits take of candidate species (under consideration for listing).

31 Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the  
32 California Fish and Game Code. These statutes prohibit take or possession of fully protected  
33 species. CDFW is unable to authorize incidental take of fully protected species when activities are  
34 proposed in areas inhabited by those species.

35 CDFW also enforces the protection of native non-game birds. Fish and Game Code Sections 3503  
36 and 3503.5 mandate the protection of California-native non-game birds' nests, and Fish and Game  
37 Code Section 3800 makes it unlawful to take California-native non-game birds (CDFG, 2008).

1 **Native Plant Protection Act (California Fish and Game Code Sections 1900 through**  
2 **1913)**

3 The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare  
4 and endangered native plants.

5 California’s NPPA requires all state agencies to use their authority to carry out programs to  
6 conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed  
7 plants from the wild and require notification of CDFW at least 10 days in advance of any change  
8 in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed.  
9 The project operator is required to conduct botanical inventories and consult with CDFW during  
10 project planning to comply with the provisions of this act and sections of CEQA that apply to rare  
11 or endangered plants.

12 **California Desert Native Plants Act**

13 The California Desert Native Plants Act (CDNPA) protects certain species of California desert  
14 native plants from unlawful harvesting on both public and privately owned lands. The CDNPA  
15 only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San  
16 Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest,  
17 transport, sale, or possession of specific native desert plants unless a person has a valid permit or  
18 wood receipt, and the required tags and seals. Plant species protected under the CDNPA include all  
19 species of the family Agavaceae (century plants, nolinias, yuccas), all species of the genus *Prosopis*  
20 (mesquites), all species of the genus *Cercidium* (palos verdes), catclaw acacia (*Acacia greggii*),  
21 desert holly (*Atriplex hymenelytra*), and other California native desert plants as identified in  
22 Division 23 of the California Food and Agriculture Code.

23 The California Fish and Game Code (Section 1602) requires an entity to notify CDFW of any  
24 proposed activity that may substantially divert or obstruct the natural flow of any river, stream or  
25 lake; substantially change or use any material from the bed, channel, or bank of, any river, stream,  
26 or lake; and/or deposit or dispose of debris, waste, or other material containing crumbled, flaked,  
27 or ground pavement where it may pass into any river, stream, or lake.

28 **Section 401 of the Clean Water Act**

29 Under Section 401 of the Clean Water Act, the RWQCB must certify that actions receiving  
30 authorization under Section 404 of the Clean Water Act also meet state water quality standards.  
31 The RWQCB also has jurisdiction over waters deemed “isolated” or not subject to Section 404  
32 jurisdiction.

33 **Porter-Cologne Water Quality Control Act - State Water Resources Control Board**

34 The Porter-Cologne Act established the State Water Resources Control Board (SWRCB) and  
35 divided California into nine regions, each overseen by an RWQCB. The SWRCB is the primary  
36 state agency responsible for protecting the quality of the State’s surface water and groundwater  
37 supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-  
38 Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d)  
39 to the SWRCB and the nine RWQCBs. Any person discharging waste or proposing to discharge

1 waste within any region, other than a community sewer system, which could affect the quality of  
2 the waters of the State, must file a report of water discharge (SWRCB, 2017).

3 The SWRCB implementation authority for the Environmental and Sustainability Program (ESP) is  
4 the Lahontan RWQCB. The Water Quality Control Plan for the Lahontan Region (or Basin Plan)  
5 sets forth water quality standards for the surface waters and groundwaters of the region, including  
6 both designated beneficial uses of water and the narrative and numerical objectives that must be  
7 maintained or attained to protect those uses (LRWQCB, 2016).

8 The SWRCB requires compliance with the Statewide General Waste Discharge Requirements for  
9 Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside  
10 of Federal Jurisdiction (Order 2004-0004-DWQ) if dredging or fill discharges to waters of the State  
11 would be less than 0.2 acre, 400 linear feet, and 50 cubic yards. Compliance with Waste Discharge  
12 Requirements means that discharges from project sites cannot cause pollution, contamination or  
13 nuisances (SWRCB, 2004).

14 The SWRCB Water Quality Control Policy for Siting, Design, Operation, and Maintenance of  
15 Wastewater Treatment Systems (Resolution No. 2012-0032) established a statewide, risk-based,  
16 tier approach for the regulation and management of onsite wastewater treatment systems (OWTS)  
17 and replacements and sets the level of performance and protection expected from OWTS in order  
18 to avoid water quality degradation and protect public health. The policy is divided into five tiers  
19 and lists standards for existing and replacement OWTS, as well as corrective action requirements  
20 for failing or potentially failing systems (SWRCB, 2012).

21 Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction  
22 of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water  
23 quality control basin plans. Each basin plan sets forth water quality standards for surface water and  
24 groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and  
25 maintain these standards.

## 26 **Local**

### 27 **Kern County General Plan**

28 The Kern County General Plan identifies the federal, state, and local statutes, ordinances, or  
29 policies that govern the conservation of biological resources that must be considered by Kern  
30 County during the decision-making process for any project that could affect biological resources.  
31 The policies and implementation measures in the Kern County General Plan for biological  
32 resources that are applicable to the project are provided below. The Kern County General Plan  
33 contains additional policies, goals, and implementation measures that are more general in nature  
34 and are not specific to development such as the proposed project. Therefore, they are not listed  
35 below, but all policies, goals, and implementation measures in the Kern County General Plan are  
36 incorporated by reference.

37 The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that  
38 the element provides for a variety of land uses for future economic growth while also ensuring the  
39 conservation of the County's agricultural, natural, and resource attributes. Section 1.10, General

1 Provisions, provides goals, policies, and implementation measures that apply to all types of  
2 discretionary projects.

3 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation**  
4 **Element**

5 Goal

6 Goal 1: Ensure that the County can accommodate anticipated future growth and  
7 development while a safe and healthful environment and a prosperous economy  
8 by preserving valuable natural resources, guiding development away from  
9 hazardous areas, and assuring the provision of adequate public services.

10 Policies

11 Policy 27: Threatened or endangered plant and wildlife species should be protected in  
12 accordance with state and federal laws.

13 Policy 28: The County should work closely with state and federal agencies to assure that  
14 discretionary projects avoid or minimize impacts on fish, wildlife, and botanical  
15 resources.

16 Policy 29: The County will seek cooperative efforts with local, state, and federal agencies to  
17 protect listed threatened and endangered plant and wildlife species through the use  
18 of conservation plans and other methods promoting management and conservation  
19 of habitat lands.

20 Policy 30: The County will promote public awareness of endangered species laws to help  
21 educate property owners and the development community of local, state, and  
22 federal programs concerning endangered species conservation issues.

23 Policy 31: Under the provisions of CEQA, the County, as lead agency, will solicit comments  
24 from the CDFW and the USFWS when an environmental document (Negative  
25 Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is  
26 prepared.

27 Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW  
28 rules and regulations to enhance the drainage, flood control, biological,  
29 recreational, and other beneficial uses while acknowledging existing land use  
30 patterns.

31 Implementation Measures

32 Measure Q: Discretionary projects shall consider effects to biological resources as required by  
33 the CEQA.

34 Measure R: Consult and consider the comments from responsible and trustee wildlife agencies  
35 when reviewing a discretionary project subject to the CEQA.

36 Measure S: Pursue the development and implementation of conservation programs with state  
37 and federal wildlife agencies for property owners desiring streamlined endangered  
38 species mitigation programs.

39 **Kern County General Plan Chapter 5. Energy Element**

40 Policies

- 1 Policy 8: The County should work closely with local, State, and federal agencies to assure  
2 that energy projects (both discretionary and ministerial) avoid or minimize direct  
3 impacts to fish, wildlife, and botanical resources, wherever practical.
- 4 Policy 9: The County should develop and implement measures which result in long-term  
5 compensation for wildlife habitat, which is unavoidably damaged by energy  
6 exploration and development activities.

7 The Kern County General Plan Conservation and Open Space Element establishes policies related  
8 to the protection of threatened or endangered plant and wildlife species and cooperation with  
9 federal, State and local agencies. The Energy Element of the General Plan requires the County to  
10 work closely with local, state, and federal agencies to assure that energy projects (both discretionary  
11 and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources,  
12 wherever practical. The Energy Element also discourages the development of energy projects on  
13 undisturbed land supporting state or federally protected plant and wildlife species. The County's  
14 General and Specific Plans encourage development within urbanized areas, encourage the  
15 preservation of Joshua trees and wildflower concentrations, and discourage the development and  
16 fragmentation of resource management areas.

17 The Mojave Specific Plan establishes objectives and policies related to biological resources, such  
18 as to promote the retention of natural setting and use of native or adaptable vegetation, to reduce  
19 the impact of development on important ecological and biological resources, and to encourage the  
20 preservation of Joshua trees, Joshua tree woodlands, wildflower displays or other biologically  
21 sensitive flora.

22 The South of Mojave-Elephant Butte Specific Plan states that the removal of native desert  
23 vegetation should be limited, stands of Joshua trees should be preserved, and utilities along  
24 roadways should be placed underground to protect scenic values. The plan also states that adheres  
25 to the guidelines identified in the plan will produce the least negative effect on wildlife, other than  
26 no development at all.

### 27 **Kern County Grading Ordinance**

28 The Kern County Grading Ordinance (County Municipal Code Chapter 17.28) requires a permit  
29 for all grading permit be obtained prior to commencement of construction activities. The Kern  
30 County Grading Guidelines specify the necessary actions to comply with the Kern County Grading  
31 Code for developers that require a grading permit for their grading activities.

## 32 **3.5.2 Environmental Consequences**

### 33 **3.5.2.1 Environmental Setting**

34 The regional and local settings have been divided into general resources including vegetation and  
35 wildlife communities, and special-status resources including special-status plants, special-status  
36 wildlife, and sensitive habitats. This section of the EIS/EIR is organized to first describe regional  
37 setting for these resources, followed by the local setting for the EUL Study Area (within which the  
38 solar facility would be located) and the local setting for the Gen-Tie Study Area (within which the  
39 project's proposed gen-tie route options are located).

1 In addition to general reference materials available, this chapter was prepared using information  
2 from the following project-specific reports and surveys referenced therein:

- 3 1. *Final Biological Technical Report for the Oro Verde Enhanced Use Lease and Gen-Tie*  
4 *Study Areas, Edwards Air Force Base* (ECORP, 2013)
- 5 2. *Final Biological Resources Technical Report for the Gen-Tie Routes for Edwards Air*  
6 *Force Base (AFB) Solar EUL Project* (Dudek, 2018a)
- 7 3. *Jurisdictional Delineation Report for Edwards Air Force Base Solar Project* (Dudek,  
8 2018b)
- 9 4. *Mohave Ground Squirrel Habitat Assessment Edwards Air Force Base Solar Project*  
10 (Brylski, 2018a)
- 11 5. *Mohave Ground Squirrel Habitat Assessment for the Gen-Tie Routes for Edwards Air*  
12 *Force Base (AFB) Solar EUL Project* (Brylski, 2018b)

13 Because the EUL Study Area is located on Edwards AFB, the study area has been subject to  
14 numerous long-term baseline biological surveys in order to inform the management of the land  
15 consistent with the INRMP (EAFB, 2017). In Section 2.3.3 of the INRMP, the Air Force describes  
16 some of the surveys that have been conducted on the base and species-specific surveys are  
17 described in the various sections that relate to the species or taxonomic group. Specifically, Section  
18 2.3.2 of the INRMP explains that on the base, terrestrial macro-arthropod surveys were conducted  
19 from 1996–1998 (Pratt, 2000). Miller and Payne (2000) evaluated aquatic habitats for  
20 macroinvertebrates from 1995 to 1996. Several different studies provided data on eubranchiopods  
21 (Branchiopod Research Group, 1993; Miller and Payne, 2000; Perez and Donn, 2009). Bird studies  
22 were conducted between 2000–2005 (AMEC Earth and Environmental, 2006). Surveys were also  
23 completed on reptiles and amphibians (AMEC Earth and Environmental, 2008) and butterflies  
24 (Pratt, 2000; EAFB, 2017). Surveys were completed for mammals, as described by species in the  
25 INRMP (EAFB, 2017). Additionally, Mohave ground squirrel survey efforts on Edwards AFB span  
26 nearly 40 years from 1973 (Recht, 1977) to 2012 (Tetra Tech, 2012). Before 2003, Mohave ground  
27 squirrel surveys were carried out on individual sites to inform base projects and as part of applied  
28 Mohave ground squirrel ecological studies. In 2003, a standardized monitoring program for  
29 Mohave ground squirrel and other species was initiated with Habitat Quality Assessment (HQA)  
30 grids established across the base. There are currently 61 HQA stations where Mohave ground  
31 squirrel populations are monitored (Tetra Tech, 2010). Additional information on Mohave ground  
32 squirrel survey efforts on Edwards AFB are described in *Mohave Ground Squirrel Habitat*  
33 *Assessment Edwards Air Force Base Solar Project* (Brylski, 2018a) (Appendix B21).

34 Several project-specific biological studies were performed in 2012 and 2013 to determine the  
35 baseline biological conditions present at the EUL Study Area. Based on the outcome of  
36 coordination with Edwards AFB and the resource agencies (USFWS and CDFW), vegetation  
37 mapping, rare plant habitat mapping, focused modified-protocol desert tortoise surveys, and  
38 focused modified-protocol burrowing owl surveys were conducted within the EUL Study Area  
39 (ECORP, 2013). In addition to these surveys, a thorough literature search was conducted to identify  
40 previous biological studies that were conducted in and around the EUL Study Area. In addition to  
41 the INRMP (EAFB, 2008), a total of 24 reports were reviewed, 11 of which were studies completed  
42 in or partially within the EUL Study Area, and the results are summarized in the biological

1 resources technical report for the EUL Study Area and incorporated in this EIS/EIR. These previous  
2 surveys, as cited in the ECORP (2013) biological resources technical report included: (1) a habitat  
3 assessment (AECOM, 2010); (2) preliminary site surveys, focused surveys for sensitive plants and  
4 desert tortoise, and Mohave ground squirrel trapping (ECORP, 2011); (3) a habitat quality analysis,  
5 which includes collecting data on small mammals, large mammals, avian, herpetofauna, and  
6 vegetation communities (ECORP, 2005); (4) focused surveys for special-status plants, dry and wet  
7 season Eubranchipod Surveys, desert tortoise surveys, and Mohave ground squirrel trapping (Tetra  
8 Tech, 1993); (5) focused surveys for alkali mariposa lily (Tetra Tech, 1995); (6) density estimates  
9 for desert tortoise (Tetra Tech, 1996); (7) density estimates for desert tortoise (Tetra Tech, 1996);  
10 (8) wildlife corridors and linkage studies (Science and Collaboration for Connected Wildlands and  
11 Northern Arizona University, 2012); (9) a jurisdictional streambeds review (URS Corporation,  
12 2011); and (10) aquatic invertebrates survey (Tetra Tech, 2009).

13 As described in Section 3.5.2.1, *Federally and State Listed Species: Desert Tortoise*, in 2014, a  
14 Biological Opinion for the effects on the federally threatened desert tortoise for Edwards AFB was  
15 completed. The Biological Opinion describes the existing conditions of the base with respect to  
16 desert tortoise habitat and the status of the species (USFWS, 2014a).

17 A jurisdictional delineation was conducted within 3,032 acres of the EUL Study Area in 2017 and  
18 2018 (Dudek, 2018b; Appendix B18). In the remainder of the EUL Study Area, to determine the  
19 potential for additional jurisdictional waters of the state to be present, a map based analysis was  
20 conducted. More specifically, the USFWS National Wetlands Inventory (NWI) (USFWS, 2017)  
21 and the U.S. Geological Survey (USGS) National Hydrographic Dataset (NHD) (USGS, 2018)  
22 were reviewed to identify potentially occurring jurisdictional waters of the state. The USFWS  
23 NWI and the NHD data generally overlap in the EUL. Because in the EUL Study Area, the  
24 USFWS NWI data was more abundant than the NHD data and the USFWS NWI data is polygon  
25 data (allowing acreage quantification), the USFWS NWI data was used in this EIS/EIR for  
26 analysis purposes to identify and quantify potential jurisdictional waters of the state. This  
27 approach provides a conservative estimate to analyze potential impacts to waters of the state  
28 under the California Environmental Quality Act (CEQA)/National Environmental Policy Act  
29 (NEPA). Prior to ground-disturbing activities, a field-based jurisdictional delineation of waters of  
30 the state will be conducted to determine and refine the precise location of waters of the state.

31 Also, a habitat assessment for Mohave ground squirrel was conducted in 2017 and 2018 in the EUL  
32 Study Area. Additional trapping surveys on the project site were conducted in 2018 (Brylski,  
33 2018a). The results of these trapping surveys were negative: Mohave ground squirrels were found  
34 to be absent.

35 Biological data has been collected for approximately 40 years on the base, and the project area has  
36 been managed consistent with the INRMP. Because the EUL Study Area has not been subject to  
37 significant disturbance, including base missions, the landscape, flora and fauna have remained  
38 relatively consistent over time. Additionally, the lands are managed consistent with the INRMP  
39 (EAFB, 2017), which requires that the native biological diversity of the ecosystem are maintained.

1 **Regional Setting**

2 This section of the EIS/EIR discusses both general and special-status biological resources in a  
3 regional setting that includes both the EUL and gen-tie study areas, as well the surrounding habitats  
4 in the region. More detailed discussions of these resources are presented in the sections titled *Local*  
5 *Setting – EUL Study Area* and *Local Setting – Gen-Tie Study Area*.

6 The biological study area within the EUL and gen-tie study area covers approximately 7,038 acres  
7 and is regionally located in northern Antelope Valley, in the western Mojave Desert in Kern  
8 County. The Antelope Valley is located in a high-desert environment with a semiarid climate and  
9 low humidity. The temperatures in the valley can be extreme. High temperatures peak in the  
10 summer months of June and July and can reach well over 100 degrees Fahrenheit (°F) with the  
11 coldest temperatures in the winter months reaching as low as 7°F. The regional setting is within the  
12 Antelope Valley Watershed located at southern end of the Sierra Nevada watershed. The average  
13 rainfall in the Antelope Valley region ranges from 5 to 10 inches.

14 **General Biological Resources**

15 **Vegetation Communities**

16 Vegetation in the project region is influenced by climate, topography, and soils, as well as past land  
17 use and includes Joshua tree woodlands, creosote scrub, saltbush scrub, and agricultural and  
18 disturbed lands with urban, commercial, and industrial uses. Common species in the region include  
19 native species such as Joshua trees (*Yucca brevifolia*) and California juniper (*Juniperus*  
20 *californicus*); native shrubs such as creosote (*Larrea tridentata*) and four-winged saltbush (*Atriplex*  
21 *canescens*); and non-native grasses such as cheatgrass (*Bromus tectorum*) and red brome (*Bromus*  
22 *madritensis* ssp. *rubens*).

23 **Wildlife Resources**

24 Because of the lack of a perennial water source and habitat types present, no fish or amphibian  
25 species are expected in the project region.

26 The western Mojave Desert supports a variety of common reptiles, birds, and mammals. Reptile  
27 species common to the region include western whiptail (*Aspidoscelis tigris*), side-blotched lizard  
28 (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), gopher snake (*Pituophis*  
29 *catenifer*), coachwhip (*Masticophis flagellum*), Mojave rattlesnake (*Crotalus scutulatus*), and  
30 sidewinder (*Crotalus cerastes*). Bird species common to the region include mourning dove  
31 (*Zenaida macroura*), California quail (*Callipepla californica*), common raven (*Corvus corax*), and  
32 red-tailed hawk (*Buteo jamaicensis*). Mammal species common to the region include black-tailed  
33 jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), white-  
34 tailed antelope squirrel (*Ammospermophilus leucurus*), desert woodrat (*Neotoma lepida*), and  
35 coyote (*Canis latrans*); bat species typical for the region include western small-footed myotis  
36 (*Myotis ciliolabrum*), California myotis (*Myotis californicus*), and western pipistrelle (*Pipistrellus*  
37 *hesperus*).

38 **Special-Status Biological Resources**

39 Special-status biological resources with potential to occur within the EUL are identified on a  
40 regional scale in this section of the EIS/EIR, while the potential for each of these resources to exist

1 within the project study areas is discussed in the Local Setting sections. Information for this section  
 2 of the EIS/EIR was compiled from a number of sources including recent searches of the CNDDDB  
 3 and the CNPS’s Electronic Inventory within the occupied and surrounding 10 USGS 7.5-minute  
 4 topographical quadrangles (i.e., a nine-quad search) for all project features, (CDFW, 2013a;  
 5 CDFW, 2017; CDFW, 2018a; CNPS, 2013; CNPS, 2017; CNPS, 2018), as well as the 2015  
 6 *Integrated Natural Resources Management Plan (INRMP), Edwards Air Force Base, California*  
 7 (EAFB, 2017) and other recent reports from projects within the region, including the project-  
 8 specific reports by ECORP (2013), Dudek (2018a, 2018b), and Brylski (2018a, 2018b).

9 Desktop analysis resulted in a total of 32 plant species and 29 wildlife species with records in the  
 10 vicinity; however, 14 plant species and 8 wildlife species are associated with habitats that do not  
 11 occur in the EUL and gen-tie study areas, or are outside the range of the species, including *Opuntia*  
 12 *basilaris* var. *treleasei* (Bakersfield cactus); thus, the species are not discussed further. The  
 13 remaining 18 plant species and 21 wildlife species are discussed here in more general terms for the  
 14 region, and are assessed for their potential to occur within the specific project study areas in the  
 15 Local Setting sections.

16 **Special-Status Plants**

17 Special-status plant species occurring in the project region are presented in **Table 3.5-1**. Special-  
 18 status plant species addressed in this document include those listed as endangered, threatened, rare,  
 19 or those species proposed for listing by USFWS and CDFW, and/or as identified as rare plants  
 20 (California Rare Plant Rank [CRPR] 1–4) by the CDFW (2018b).

21 **TABLE 3.5-1**  
 22 **SPECIAL-STATUS PLANT SPECIES OCCURRING IN THE PROJECT REGION**

Species	Status	Habitat and Distribution	Blooming Period
<i>Astragalus hornii</i> var. <i>hornii</i> Horn’s milk-vetch	US: – CA: – CRPR: 1B.1	Annual herb of alkaline sinks and wetland riparian areas of the San Joaquin Valley, Western Transverse Ranges, west edge of the Mojave Desert at 200 to 2,400-foot elevation.	May–September
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	US: – CA: – CRPR: 1B.1	Annual herb found in chenopod (saltbush) scrub at approximately 2,000-foot elevation.	March–May
<i>California macrophylla</i> round-leaved filaree	US: – CA: – CRPR: 1B.2	Annual herb found in clay soils within cismontane woodland and valley and foothill grassland at elevations of 45 to 3,935 feet.	March–May
<i>Calochortus striatus</i> alkali mariposa-lily	US: – CA: – CRPR: 1B.2	Perennial herb found in alkali depressions supporting chenopod scrub at elevations from 2,500 to 4,000 feet.	April–June
<i>Canbya candida</i> White pygmy poppy	US: – CA: – CRPR: 4.2	Annual herb found in Joshua tree woodland, Mojave desert scrubs, and pinyon and juniper woodlands with gravelly, sandy, or granitic soils at elevations of 2,000 to 5,000 feet.	March–June
<i>Chorizanthe spinosa</i> Mojave spineflower	US: – CA: – CRPR: 4.2	Annual herb found in chenopod scrub, Joshua tree woodland, Mojave desert scrubs, and playas at elevations of 20 to 4,000 feet.	March–July
<i>Cymopterus deserticola</i> desert cymopterus	US: – CA: – CRPR: 1B.2	Perennial herb found in Joshua tree woodland and Mojave desert scrubs with sandy soils at elevations of 2,000 to 5,000 feet.	March–May

Species	Status	Habitat and Distribution	Blooming Period
<i>Delphinium recurvatum</i> Recurved larkspur	US: – CA: – CRPR: 1B.2	Perennial herb found in chenopod scrub, cismontane woodland, and valley and foothill grasslands with alkaline soils at elevations of 10 to 2,500 feet.	March–June
<i>Eriastrum rosamondense</i> Rosamond eriastrum	US: – CA: – CRPR: 1B.1	Annual herb found within chenopod scrub (openings), vernal pools (edges) and alkaline hummocks, often in sandy soils, at elevations of 2,295 to 2,345 feet.	April–July
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	US: – CA: – CNPS: 1B.2	Annual herb found in chenopod scrub, Mojave desert scrubs and playas at elevations of 1,500 to 2,500 feet.	March–May
<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i> Red Rock poppy	US: – CA: – CRPR: 1B.2	Annual herb found in Mojave desert scrubs that supports volcanic tuff at elevations of 2,000 to 4,000 feet.	March–May
<i>Layia heterotricha</i> pale-yellow layia	US: – CA: – CRPR: 1B.1	Annual herb found in alkaline or clay soils within cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland at elevations of 980 to 5,595 feet.	March–June
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	US: – CA: – CRPR: 2B.2	Annual herb found in desert dunes, Great Basin and Sonoran desert scrubs with sandy soils at 2,000 to 5,000-foot elevation.	April–May
<i>Navarretia setiloba</i> <i>Piute Mountains navarretia</i>	US: – CA: – CRPR: 1B.1	Annual herb found in clay or gravelly loam soils within cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland at elevations of 935 to 6,890 feet.	April–July
<i>Phacelia nashiana</i> Charlotte's phacelia	US: – CA: – CRPR: 1B.2	Annual herb typically found on east-facing slopes in Joshua tree woodland, Mojave desert scrubs, and pinyon and juniper woodlands with gravelly, sandy, or granitic soils at elevations of 2,000 to 7,000 feet.	June–October
<i>Puccinellia simplex</i> California alkali grass	US: – CA: – CRPR: 1B.2	Annual herb found in alkaline, vernal mesic; sinks, flats, and lake margins within chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools at elevations of 5 to 3,050 feet.	March–May
<i>Saltugilia latimeri</i> <i>Latimer's woodland-gilia</i>	US: – CA: – CRPR: 1B.2	Annual herb found in rocky or sandy, often granitic, sometimes washes within chaparral, Mojavean desert scrub, and pinyon and juniper woodland at elevations of 1,310 to 6,235 feet.	March–June
<i>Senna covesii</i> <i>Coves' cassia</i>	US: – CA: – CRPR: 2B.2	Perennial herb found in dry, sandy desert washes and slopes within Sonoran desert scrub at elevations of 735 to 4,250 feet.	March–June

US: Federal Designations

E: Federally listed, endangered

California Rare Plant Rank (CRPR) designations (CDFW, 2018b):

1A. Presumed extirpated in California and either rare or extinct elsewhere

1B. Rare or Endangered in California and elsewhere

2A. Presumed extirpated in California, but more common elsewhere

2B. Rare or Endangered in California, but more common elsewhere

3. Plants for which we need more information - Review list

4. Plants of limited distribution - Watch list

CRPR extension meanings (i.e., Threat Ranks) (CDFW, 2018b):

1 Seriously endangered in California (over 80 percent of occurrences threatened or have high degree and immediacy of threat).

2 Fairly endangered in California (20–80 percent occurrences threatened).

CA: State Designations

E: State-listed, endangered

Source: California Natural Diversity Database (CDFW, 2018a), California Native Plant Society Electronic Inventory (CNPS, 2018)

USGS 7.5-minute topographical quads searched: Bissell, Cache Peak, California City South, Edwards, Little Buttes, Mojave, Mojave NE, Monolith, Redman, Rosamond, Rosamond Lake, Sanborn, Soledad Mountain, Tehachapi North, Tehachapi NE, Tehachapi South, Tylerhorse Canyon, Willow Springs.

1 Special-Status Wildlife

2 Special-status wildlife species occurring in the project region are presented in **Table 3.5-2** and  
3 discussed further in the Local Setting Section. This list was prepared from searches of the CNDDDB  
4 and INRMP, and from a compilation of reports for proposed projects in the region, including this  
5 project. Additionally, the *Final Biological Technical Report for the Oro Verde Enhanced Use Lease*  
6 *and Gen-Tie Study Areas, Edwards Air Force Base* was reviewed (ECORP, 2013). Special-status  
7 wildlife species include:

- 8 • Those listed as Endangered or Threatened and those species proposed for listing by  
9 USFWS and CDFW
- 10 • Those listed as Fully Protected by CDFW
- 11 • Birds listed by USFWS as Birds of Conservation Concern (BCC)
- 12 • CDFW Species of Special Concern (SSC)

13 Bird, amphibian, or reptile species whose only status is on the watch list were not included in this  
14 table.

15 **TABLE 3.5-2**  
16 **SPECIAL-STATUS WILDLIFE SPECIES OCCURRING IN THE PROJECT REGION**

Species	Status	Habitat and Distribution
<b>REPTILES</b>		
<i>Anniella pulchra</i> northern California legless lizard	CA: SSC	Found in stabilized dunes, beaches, dry washes, chaparral, scrubs, pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils.
<i>Gopherus agassizii</i> desert tortoise	US: T CA: T	Historically found throughout the Mojave and Sonoran Deserts. Found in the open desert as well as in oases, riverbanks, washes, dunes, and occasionally rocky slopes that support creosote bush scrub, saltbush scrub, and Joshua tree woodland.
<b>BIRDS</b>		
<i>Aquila chrysaetos</i> golden eagle	US: – BGEPA, BCC CA: FP	Found in open and semi-open areas such as prairie, tundra, sparse woodlands and desert scrub habitats. Nests on steep high-elevation cliffs and forages in large areas surrounding nesting sites.
<i>Asio flammeus</i> short-eared owl	US: – CA: SSC	Found in disturbed habitats such as old croplands and windrows, as well as grasslands. Not known to nest in desert scrub habitats in California (Roberson, 2008).
<i>Athene cunicularia</i> burrowing owl	US: BCC CA: SSC	Found mainly in grassland and open scrub from the seashore to foothills. Strongly associated with ground squirrel burrows and burrows of other small mammals.
<i>Buteo regalis</i> ferruginous hawk	US: BCC CA: WL	Range spans from western North America, north to Canada in summer, and south to Mexico in winter. Winters in Antelope Valley where it forages in open fields.
<i>Buteo swainsoni</i> Swainson's hawk	US: BCC CA: T	Migrant that breeds in North America and winters in South America. Nests in large trees, often in riparian habitat and adjacent to open habitat. Forages in open grasslands, agricultural areas, sparse shrublands, and small open woodlands. During breeding season, eats mammals, birds, and reptiles. The rest of the year it eats insects, especially grasshoppers and dragonflies.

Species		Status	Habitat and Distribution
Charadrius mountain plover	montanus	US: BCC CA: SSC	Found in open areas dominated by bare ground or low-growing vegetation and abundant prey.
Circus northern harrier	cyaneus	US: – CA: SSC	Found in open areas dominated by low-growing vegetation with suitable perches available. Breeds and forages in a variety of habitats such as deserts, floodplains, croplands, agricultural areas, and grasslands.
Falco prairie falcon	mexicanus	US: BCC CA: WL	Found primarily in open areas such as plains and prairies with steep vertical cliffs for nesting.
Lanius loggerhead shrike	ludovicianus	US: BCC CA: SSC	Occurs in semi-open country with utility posts, wires, and trees to perch on. Nests in bushes and trees.
Spinus ( <i>Carduelis</i> ) Lawrence's (nesting)	lawrencei goldfinch	US: BCC	Valley foothill hardwood, valley foothill hardwood-conifer, desert riparian, palm oasis, pinyon-juniper and lower montane habitats.
Toxostoma Le Conte's thrasher	lecontei	US: BCC CA: SSC	Open desert wash, creosote scrub, alkali desert scrub, desert succulent scrub.
<b>MAMMALS</b>			
Antrozous pallid bat	pallidus	US: – CA: SSC	Arid habitats, including grasslands, shrublands, woodlands and forests; for roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.
Corynorhinus Townsend's big-eared bat	townsendii	US: – CA: SSC	Typically found in coniferous and deciduous forests; uses caves, mines, and buildings for roosts.
Euderma spotted bat	maculatum	CA: SSC	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes.
Onychomys torridus southern grasshopper mouse	ramona	US: – CA: SSC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.
Perognathus inexpectatus Tehachapi pocket mouse	alticolus	CA: SSC	Arid annual grassland and desert shrub communities, but also taken in fallow grain field and in Russian thistle.
Taxidea American badger	taxus	US: – CA: SSC, FBM	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.
Vulpes desert kit fox	macrotis arsipus	US: – CA: FBM	Found in desert habitats that include creosote bush, shadscale, greasewood, and sagebrush. This species was included because of heightened concern due to recent issues with disease.

Species	Status	Habitat and Distribution
Xerospermophilus mohavensis Mohave ground squirrel	US: – CA: T	Occurs in desert scrub, alkali scrub, and Joshua tree woodland habitats in the Mojave Desert.
US: Federal Designations T: Federally listed, threatened BGEPA: Bald and Golden Eagle Protection Act BCC: Birds of Conservation Concern		CA: State Designations T: State-listed, threatened SSC: California Species of Special Concern FP: Fully Protected WL: Watch List FBM: fur-bearing mammal

SOURCE: California Natural Diversity Database (CDFW, 2018a)  
 USGS 7.5-minute topographical quads searched: Bissell, Cache Peak, California City South, Edwards, Little Buttes, Mojave, Mojave NE, Monolith, Redman, Rosamond, Rosamond Lake, Sanborn, Soledad Mountain, Tehachapi North, Tehachapi NE, Tehachapi South, Tylerhorse Canyon, Willow Springs.

1

2 **Sensitive Habitats**

3 Sensitive natural communities are designated as such by various resource agencies, such as the  
 4 CDFW, or in local policies and regulations, and are generally considered to have important  
 5 functions or values for wildlife and/or are recognized as declining in extent or distribution, and are  
 6 considered threatened enough to warrant some sort of protection. Sensitive habitats include:

- 7 • Designated critical habitat for federal or state listed (endangered and threatened) species
- 8 • Waters of the United States and state jurisdictional waters, including waters regulated by  
 9 CDFW and RWQCB
- 10 • CDFW sensitive natural communities (i.e., those with a rank of S1-S3) (CDFW, 2018c)
- 11 • Locally sensitive communities

12 Numerous ephemeral drainages are present within the regional setting area. These drainages are  
 13 considered isolated and not under the jurisdiction of USACE, consistent with other similar  
 14 drainages within the Antelope Valley Watershed such as those found not to be jurisdictional, under  
 15 the approved jurisdictional determination issued for the Sunlight Partners Solar Array Project on  
 16 June 7, 2013 (USACE, 2013). Figure 3.16-1 shows the Antelope Valley watershed in relation to  
 17 the region and the EUL and Gen-Tie Study Areas in order to show that these areas do not fall under  
 18 USACE jurisdiction. A jurisdictional delineation for waters of the state has been conducted on  
 19 3,032 acres (Dudek, 2018b). In the remainder of the EUL, a map-based analysis of potentially  
 20 jurisdictional waters was conducted and is described in detail in the *Local Setting – EUL Study*  
 21 *Area*. Additional information related to Waters of the United States, state jurisdictional waters, and  
 22 waters regulated by RWQCB are presented in Section 3.16, *Hydrology and Water Quality*, of this  
 23 EIS/EIR.

24 CDFW tracks communities it believes to be of conservation concern through its list of *California*  
 25 *Sensitive Natural Communities* (CDFW, 2018c). Natural communities that historically occur within  
 26 the project region include valley needlegrass grassland, wildflower fields, and Joshua tree  
 27 woodlands.

1 Joshua tree woodlands have a global rank (G-rank) of G4 and a state rank (S-rank) of S3 indicating  
2 that this community is uncommon but not rare within its entire range yet vulnerable in the State of  
3 California due to its restricted range, relatively few populations, recent and widespread declines, or  
4 other factors making it vulnerable to extirpation from California (CDFW, 2018b). In Kern County,  
5 this habitat is specifically designated in many local plans, ordinances, and policies as a biological  
6 resource of concern. The Mojave Desert region contains approximately 3,646 square miles of  
7 Joshua tree woodland. Joshua trees grow on dry stony mesas, flats, and slopes from 2,000 to 6,000  
8 feet in elevation in the Mojave Desert and usually occur in association with desert scrub vegetation.

### 9 **Wildlife Movement Corridors**

10 Wildlife corridors are defined as linear landscape elements that serve as linkages between  
11 historically connected habitats/natural areas, and facilitate movement between these natural areas  
12 (Beier and Loe, 1992). Major components of regional wildlife movement corridors include  
13 providing opportunities for food, water, shelter, and unimpeded movement between natural areas.  
14 Regional documents describing potential linkages show no remaining significant potential linkages  
15 in the project region, particularly for the federally and state threatened desert tortoise (Hagerty,  
16 2010; SCWildlands, 2012; USFWS, 2013; Vandergast, 2013). In addition, fencing on the eastern  
17 and northern boundaries may limit movement by larger wildlife. While such fencing is permeable  
18 for many species, the open spaces in adjacent lands would remain available for movement of  
19 wildlife that may be able to travel through these barriers.

20 The region is within the Pacific Flyway for avian migratory species, with potential for numerous  
21 migratory species stopping over for food or shelter resources during migrations.

### 22 **Local Setting – EUL Study Area**

23 The EUL Study Area is the area within which the solar facilities and associated infrastructure  
24 (excluding the gen-tie line) would be built. The EUL Study Area elevations range from 2,440 to  
25 2,565 feet.

### 26 **General Biological Resources**

#### 27 **Vegetation Communities**

28 Vegetation communities in the EUL Study Area are shown on **Figure 3.5-1, Vegetation**  
29 **Communities**. Acreages are also provided in **Table 3.5-3**. The nomenclature for vegetation  
30 communities in the EUL Study Area follows the *Manual of California Vegetation* (Sawyer et al.,  
31 2009) and the *List of Sensitive Communities* (CDFW, 2018c). The dominant vegetation  
32 communities within the EUL Study Area are shadscale scrub and Joshua tree woodland. These  
33 communities intergrade frequently with several other vegetation communities, including rubber  
34 rabbitbrush scrub, Mojave mixed woody scrub, creosote bush scrub, four-wing saltbush scrub,  
35 white bursage scrub, and salt grass flats. In addition, portions of the EUL Study Area have been  
36 disturbed by previous land uses or fire and these areas are generally dominated by non-native plant  
37 species, such as salt cedar (*Tamarix aphylla*) and Russian thistle (*Salsola tragus*) (ECORP, 2013).

38

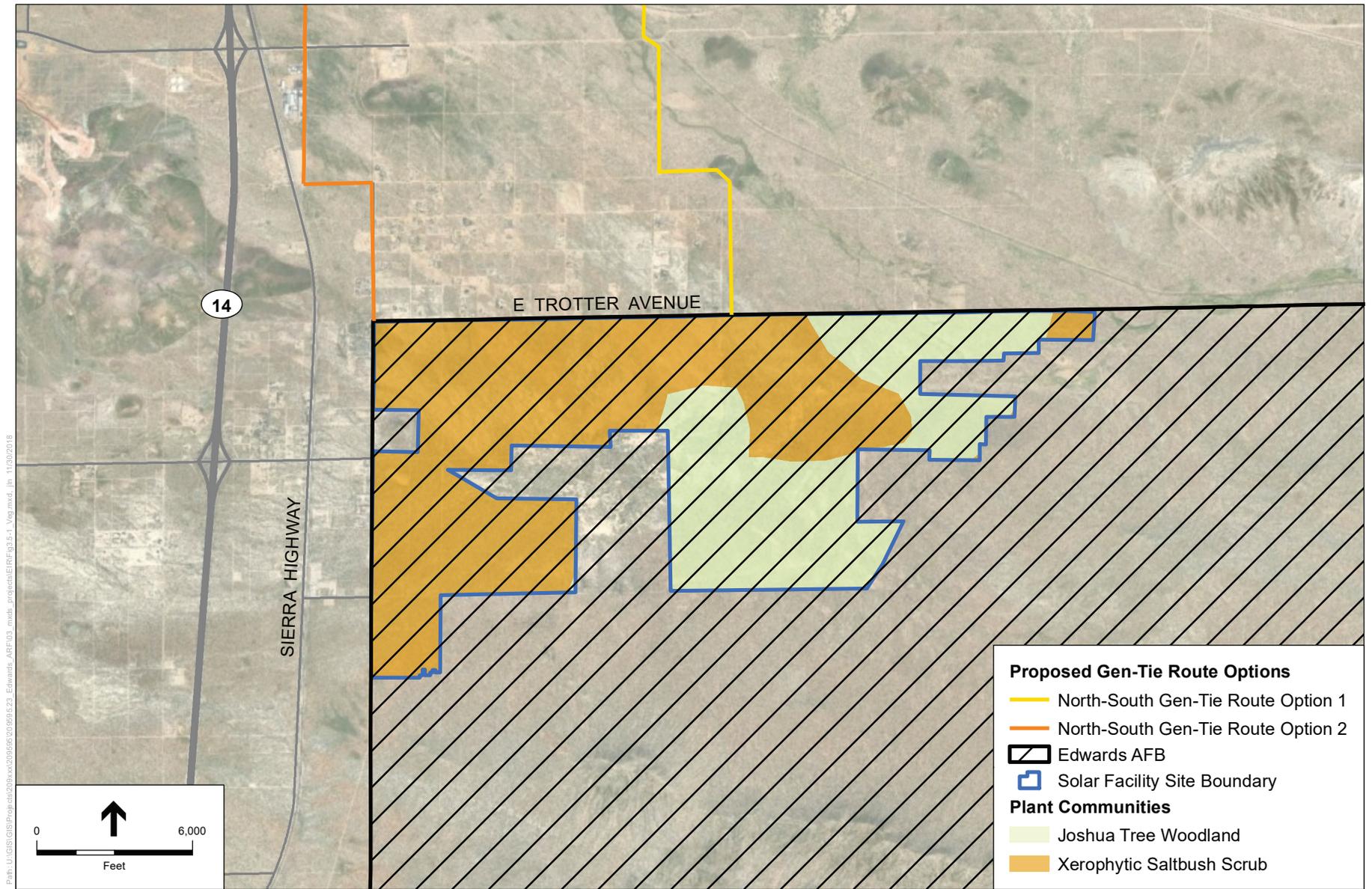


FIGURE 3.5-1: VEGETATION MAP (SOLAR SITE)

1  
2

**TABLE 3.5-3  
 VEGETATION COMMUNITIES IN THE EUL STUDY AREA**

<b>Community</b>	<b>Acres</b>
Joshua Tree Woodland	1,047
Shadscale Scrub	4,019
Four-wing Saltbush Scrub	229
Mojave Mixed Woody Scrub	113
Creosote Bush Scrub	53
White Bursage Scrub	41
Rubber Rabbitbrush Scrub	26
Salt Grass Flats	5
Clay Pans	25
Tamarisk Thickets	1
Burn Area (Russian thistle)	414
Disturbed	12
<b>Total</b>	<b>5,985</b>

SOURCE: ECORP, 2013

3

4 **Wildlife Resources**

5 Due to the lack of a perennial water source and habitat types present, no fish or amphibian species  
 6 are expected in the EUL Study Area.

7 The most common reptiles in the EUL Study Area include the western zebra-tailed lizard, Mojave  
 8 rattlesnake, desert horned lizard (*Phrynosoma platyrhinos*), and side-blotched lizard. Bird species  
 9 commonly recorded in the EUL Study Area include red-tailed hawk, California quail, American  
 10 kestrel (*Falco sparverius*), ash-throated flycatcher (*Myiarchus cinerascens*), and western  
 11 meadowlark (*Sturnella neglecta*). Mammal species commonly recorded in the EUL Study Area  
 12 include white-tailed antelope squirrel, coyote, kangaroo rat (*Dipodomys* spp.), black-tailed  
 13 jackrabbit, and bobcat (*Lynx rufus*).

14 **Special-Status Biological Resources**

15 This section of the EIS/EIR examines the 11 plant and 15 wildlife species identified in the Regional  
 16 Setting (Section 3.5.3.1) that have records in the vicinity of the EUL Study Area and addresses  
 17 their potential to occur at the EUL Study Area specifically. Of these, two plant species and six  
 18 wildlife species are known to occur within the EUL Study Area. The potential to occur was based  
 19 on the following criteria:

- 20 • **Present:** Species was observed in or immediately adjacent to the EUL Study Area during  
 21 a site visit or focused survey within the past 5 years.
- 22 • **High:** Habitat (including appropriate vegetation, soils and elevation factors) and known  
 23 historical range for the species occurs in the EUL Study Area and a known occurrence has  
 24 been recorded within 5 miles within the past 20 years.

- 1 • **Moderate:** Habitat for the species occurs in the EUL Study Area and a known occurrence  
2 exists in the database search, between 5 and 10 miles away, recorded within the past 20  
3 years.
- 4 • **Low:** Limited or no suitable habitat for the species occurs in the EUL Study Area and a  
5 known occurrence is greater than 10 miles from the EUL Study Area or over 20 years old  
6 (as many focused botanical and wildlife surveys have been conducted within the project  
7 region in the past 20 years).

8 **Special-Status Plants**

9 **Table 3.5-4** lists the potential for special-status plants to occur at the EUL Study Area and an  
10 explanation of how that level of potential was determined. Species with a moderate or higher  
11 potential to occur are discussed in more detail.

12 **TABLE 3.5-4**  
13 **SPECIAL-STATUS PLANT SPECIES POTENTIAL TO OCCUR IN THE EUL STUDY AREA**

Species	Status	Potential to Occur	Explanation
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	US: – CA: – CRPR: 1B.1	Low	Suitable habitat is present in the EUL Study Area with a record approximately 9 miles away, but was last recorded in 1931 (CDFW, 2018a).
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	US: – CA: – CRPR: 1B.1	Low	Suitable habitat is present in the EUL Study Area with a record approximately 15 miles away, but was last recorded in 1993 (CDFW, 2018a).
<i>Calochortus striatus</i> alkali mariposa-lily	US: – CA: – CRPR: 1B.2	Present	Species was recorded during surveys in 2013 and 1995 within the EUL Study Area.
<i>Canbya candida</i> white pygmy poppy	US: – CA: – CRPR: 4.2	Low	Suitable habitat is present in the EUL Study Area with a record approximately 5 miles away (CDFW, 2018a), but was last recorded in 1935 and 1965.
<i>Chorizanthe spinosa</i> Mojave spineflower	US: – CA: – CRPR: 4.2	Present	Species was recorded during surveys in 2013 and 1995 within the EUL Study Area.
<i>Cymopterus deserticola</i> desert cymopterus	US: – CA: – CRPR: 1B.2	Moderate	Suitable habitat is present in the EUL Study Area with records in areas surrounding the EUL Study Area from 1995.
<i>Delphinium recurvatum</i> recurved larkspur	US: – CA: – CRPR: 1B.2	High	Suitable habitat is present in the xerophytic saltbush scrub communities and a population was recorded 0.5 miles southwest of the EUL Study Area in 2011 (CDFW, 2018a).
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	US: – CA: – CRPR: 1B.2	Moderate	Suitable habitat is present in the EUL Study Area with records to the north and south of the EUL Study Area from 1995 and 2005 (CDFW, 2018a).
<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i> Red Rock poppy	US: – CA: – CRPR: 1B.2	Low	Suitable habitat is present in the rocky outcrop in the northwest portion of the EUL Study Area and populations were recorded approximately 7 miles to the southeast between 1932 and 1977 (CDFW, 2018a).

Species	Status	Potential to Occur	Explanation
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	US: – CA: – CRPR: 2.2	High	Suitable habitat is present in the sandy soils throughout the EUL Study Area with several populations documented near the site, most recently in 1998.
<i>Phacelia nashiana</i> Charlotte's phacelia	US: – CA: – CRPR: 1B.2	Low	Marginal habitat is present throughout the EUL Study Area and populations have been documented approximately 16 miles to the north in higher elevations (CDFW, 2018a).

1

2 Federally and State Listed Species

3 No federally or state listed plant species are expected in the EUL Study area.

4 Other Special-Status Species

5 The **alkali mariposa lily** (*Calochortus striatus*) is a bulb-forming perennial that is typically found  
 6 in alkaline meadows and ephemeral washes in chaparral, chenopod scrub, and Mojavean desert  
 7 scrub habitats. The alkali mariposa lily was observed incidentally during the 2013 desert tortoise  
 8 surveys conducted in the EUL Study Area, and in 1995 four populations were identified in the EUL  
 9 Study Area (ECORP, 2013). A population has been recorded along Sierra Highway near Sopp  
 10 Road, approximately 0.5 mile west of the southwest portion of the EUL Study Area (CDFW, 2018a,  
 11 2018c). Suitable habitat for this species is present in the xerophytic saltbush scrub communities  
 12 and ephemeral washes with claypans and playas, primarily in the central and western portions of  
 13 the EUL Study Area.

14 The **Mojave spineflower** (*Chorizanthe spinosa*) is a low-growing herbaceous plant that occurs in  
 15 bare or disturbed areas in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and  
 16 playas. This species was observed incidentally during 2012 and 2013 surveys in the northwestern  
 17 portions of the EUL Study Area (ECORP, 2013), as well as in past surveys (AFFTC, 1993;  
 18 AECOM, 2010). Suitable habitat for this species is present throughout the EUL Study Area, but  
 19 they have been primarily observed in the western portion in xerophytic saltbush scrub supporting  
 20 playas and bare or disturbed areas. Mojave spineflower is locally common off base in the  
 21 Rosamond area (EAFB, 2017).

22 The **desert cymopterus** (*Cymopterus deserticola*) is found in Joshua tree woodland and Mojavean  
 23 desert scrub with sandy soils. The most recent records of this species include 1995 surveys that  
 24 identified several populations in the central and eastern portions of Edwards AFB, with the closest  
 25 record located approximately 6 miles east of the EUL Study Area (ECORP, 2013). Based on the  
 26 presence of suitable vegetation communities and sandy soils throughout the majority of the EUL  
 27 Study Area and records greater than 5 miles away, this species has a moderate potential to occur.  
 28 Geographic information system-based (GIS) modeling and ground surveys indicate it is unlikely  
 29 for this species to occur within the EUL Study Area.

30 The **recurved larkspur** (*Delphinium recurvatum*) is found in chenopod scrub, cismontane  
 31 woodland, and valley and foothill grassland with alkaline soils. In 2011, this species was reported  
 32 north of the town of Rosamond and south of Backus Road, which is approximately 0.5 miles  
 33 southwest of the western portion of the EUL Study Area (CDFW, 2018a, 2018c). Based on the

1 presence of suitable habitat in the xerophytic saltbush scrub communities in the central and western  
2 portions of the EUL Study Area and a recent record nearby, this species has a high potential to  
3 occur.

4 The **Barstow woolly sunflower (*Eriophyllum mohavense*)** is typically found in areas with silty or  
5 sandy soils in desert playas, desert chenopod scrub, and Mojavean desert scrub habitats. In 2005,  
6 this species was reported near the Hyundai test track, which is approximately 6 miles north of the  
7 EUL Study Area (CDFW, 2018a, 2018c). In 1995, 30 distinct populations of Barstow woolly  
8 sunflower were found across Edwards AFB, the closest of which was approximately 8 miles south  
9 of the EUL Study Area (ECORP, 2013). Based on the presence of suitable habitat in the xerophytic  
10 saltbush scrub communities supporting claypans and playas in the central and western portions of  
11 the EUL Study Area and a record located more than 5 miles away, this species has a moderate  
12 potential to occur.

13 The **sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*)** is found in desert dunes,  
14 Great Basin scrub, and Sonoran Desert scrub in sandy areas. In 1998, this species was recorded  
15 approximately 0.5 mile northwest of the EUL Study Area (CDFW, 2018a, 2018c). Based on the  
16 presence of sandy soils throughout the majority of the EUL Study Area and a record nearby, this  
17 species has a high potential to occur.

18 **Special-Status Wildlife**

19 **Table 3.5-5** lists the potential for special-status wildlife species to occur at the EUL Study Area  
20 and an explanation of how that level of potential was determined. All species have a moderate or  
21 higher potential to occur except the Mohave ground squirrel and mountain plover which both have  
22 a low potential to occur.

23 **TABLE 3.5-5**  
24 **SPECIAL-STATUS WILDLIFE SPECIES' POTENTIAL TO OCCUR IN THE EUL STUDY AREA**

Species	Status	Potential to Occur	Explanation
<b>REPTILES</b>			
Gopherus desert tortoise	agassizii US: T CA: T	Present	Observed during 2013 focused surveys of the EUL Study Area (ECORP, 2013) and has been recorded there in the past.
<b>BIRDS</b>			
Aquila golden eagle	chrysaetos US: – , BGEPA, BCC CA: FP	Moderate (foraging only)	Nesting habitat is not present in the EUL Study Area. Moderate potential to occur during winter and dispersal. The nearest CNDDDB occurrence is from approximately 2 miles from the site (1.8 miles southwest of the intersection of State Route 14 and Silver Queen Road), although the location is not known to have been occupied since 1969 (CDFW, 2018a).
Asio short-eared owl	flammeus US: – CA: SSC	Present	Observed during 2013 surveys of the EUL Study Area, but the species is not likely to nest, due to the absence of suitable nesting habitat.
Athene burrowing owl	cunicularia US: BCC CA: SSC	Present	Observed during 2013 surveys of the EUL Study Area. A total of 30 occupied burrows were observed and recorded (ECORP, 2013).

Species	Status	Potential to Occur	Explanation
<i>Buteo</i> <i>regalis</i> ferruginous hawk	US: – , BCC CA: WL	Low (foraging only)	Nesting habitat is not present in the EUL Study Area and the site is not in the breeding range of the species, but abundant foraging habitat is present and recent records are found within 10 miles.
<i>Buteo</i> <i>swainsoni</i> Swainson's hawk	US: – , BCC CA: T	Low (nesting), Moderate (dispersal and migration)	Not expected to nest because of the lack of recorded nesting within 5 miles of the site and the absence of optimal foraging habitat in the EUL Study Area or vicinity. However, migrating and dispersing hawks may forage in the desert scrub in the EUL Study Area.
<i>Charadrius</i> <i>montanus</i> mountain plover	US: – , BCC CA: SSC	Low	This species does not nest in California. Limited wintering habitat is present and recent records are found within 10 miles.
<i>Circus</i> <i>cyaneus</i> northern harrier	US: – CA: SSC	High (foraging only)	The EUL Study Area is outside of the known range of the species (Davis and Niemela, 2008), but individuals may forage in the EUL Study Area.
<i>Falco</i> <i>mexicanus</i> prairie falcon	US: – , BCC CA: WL	High (foraging only)	Nesting habitat is not present in the EUL Study Area, but abundant foraging habitat is present and recent records are found within 5 miles.
<i>Lanius</i> <i>ludovicianus</i> loggerhead shrike	US: – , BCC CA: SSC	Present	Active nests observed during 2013 surveys of the EUL Study Area (ECORP, 2013).
<b>MAMMALS</b>			
<i>Corynorhinus</i> <i>townsendii</i> Townsend's big-eared bat	US: – CA: SSC	Low (foraging only)	Nesting habitat is not present in the EUL Study Area, but abundant foraging habitat is present and recent records are found within 5 miles.
<i>Taxidea</i> <i>taxus</i> American badger	US: – CA: SSC	Present	Active sign observed, including potential dens, during 2013 surveys of the EUL Study Area (ECORP, 2013).
<i>Vulpes</i> <i>macrotis</i> <i>arsipus</i> desert kit fox	US: – CA: –	Present	Active sign, including one known den, observed during 2013 surveys of the EUL Study Area (ECORP, 2013).
<i>Xerospermophilus</i> <i>mohavensis</i> Mohave ground squirrel	US: – CA: T	Low	Suitable but low-quality habitat is present in the EUL Study Area. Occurrence records in the project region inside and outside the base support the conclusion that there is a low potential for species to occur in the EUL Study Area. On-site focused trapping surveys during 2018 identified none (Brylski, 2018a).

1 Federally and State Listed Species

2 The **desert tortoise (*Gopherus agassizii*)** is found in Mojave Desert habitats that support soils  
3 suitable for digging stable burrows (neither too sandy nor too rocky). It forages on annual grasses  
4 and forbs, perennial shrubs and grasses, and cacti. Desert tortoises have been observed in the EUL  
5 Study Area during multiple surveys conducted since 2003. Suitable habitat for desert tortoise is  
6 present throughout the EUL Study Area. Although densities of desert tortoise are difficult to  
7 determine with existing data (ECORP, 2013; Tetra Tech, 2008), they likely occur at low densities  
8 throughout the EUL Study Area based on numbers recorded during recent surveys (ECORP, 2013).

9 A 2014 U.S. Fish and Wildlife Service Biological Opinion for Operations and Activities at Edwards  
10 Air Force Base, California (8-8-14-F-14) identifies terms and conditions required to protect the  
11 desert tortoise in accordance with Section 7 of the Federal ESA. This Biological Opinion covers  
12 the future development of solar facilities and the construction of a gen-tie line to the Windhub  
13 Substation (USFWS, 2014a). The Biological Opinion determined that the loss of habitat due to  
14 development of up to 4,000 acres for a proposed solar project was unlikely to appreciably reduce  
15 the distribution of the desert tortoise in relation to the range of the listed taxon. Desert tortoises  
16 may be relocated in accordance with the biological opinion.

17 The **Swainson's hawk (*Buteo swainsoni*)** prefers grasslands, grain, or alfalfa fields and livestock  
18 pastures for foraging and prefers to nest in stands with few trees in juniper-sage flats, riparian areas,  
19 and oak savannah (Polite, 2006). Its diet consists mainly of mammals and other vertebrates.  
20 Suitable foraging habitat occurs throughout the EUL Study Area, but nesting habitat is limited to  
21 Joshua tree woodlands and the tamarisk thickets. Surveys of the gen-tie and 5-mile buffer in 2017  
22 covered much of the area within 5 miles of the EUL Study Area (Dudek, 2017). These surveys  
23 were negative, and CNDDDB includes no occurrences within approximately 9 miles of the EUL  
24 Study Area (CDFW, 2018a).

25 The **Mohave ground squirrel (*Xerospermophilus mohavensis*)** is found in flat to moderately  
26 sloping desert habitats with friable soils and abundant annual vegetation. Its diet includes foliage,  
27 flowers, and seeds of shrubs and annual plants. This species is active between the months of March  
28 and July and hibernates between August and February (Johnson, 1990 ). Mohave ground squirrel  
29 have been reported in a range of open desert habitats (Gustavson, 1993), which are found in the  
30 EUL Study Area; however, the habitat in the EUL Study Area is of low quality (Brylski, 2018a).  
31 Moreover, trapping conducted in and near the EUL Study Area (which is in the far northwest area  
32 of Edwards AFB) since 1973 did not record presence of this species (Brylski, 2018a). Leitner's  
33 findings are consistent with the literature review and habitat assessment performed by Brylski  
34 (2018a). These absence findings are also consistent with absence findings to the immediate north  
35 and west of the western boundary of Edwards AFB and consistent with trapping surveys conducted  
36 in 2018, in which no Mohave ground squirrels were detected. The rarity of Mohave ground squirrel  
37 occurrences in the northwestern portion of the base, and in Rosamond/Mojave areas outside the  
38 base, is likely related to the location on the extreme western edge of the species' range (Brylski,  
39 2018a).

1 *Other Special-Status Species*

2 The **golden eagle** (*Aquila chrysaetos*) is typically found in open and semi-open areas, such as  
3 prairie, tundra, sparse woodlands, and sagebrush habitats, where it feeds primarily on lagomorphs  
4 and squirrels. Golden eagles will also occasionally prey upon larger mammals, birds, and snakes  
5 and they are known to feed on carrion. This species builds very large (10-foot-wide) stick nests on  
6 cliffs of all heights or in sturdy trees that are in rugged, open habitat with canyons and escarpments  
7 nearby (Polite and Pratt, 1990). Nesting habitat is not present in the EUL Study Area. The nearest  
8 CNDDDB occurrence is from approximately 2 miles from the site (1.8 miles southwest of the  
9 intersection of State Route (SR) 14 and Silver Queen Road), although the location is not known to  
10 have been occupied since 1969 (CDFW, 2018a). The next nearest occurrence of nesting activity is  
11 16 miles northwest of the EUL Study Area. The species is generally expected to nest in the  
12 Tehachapi Mountains to the north and west, and potentially occur in the vicinity in winter and  
13 during dispersal, but nesting habitat is absent from the site.

14 The **short-eared owl** (*Asio flammeus*) is found in a wide variety of open habitats with low  
15 vegetation including marshes, dunes, prairies, grassy plains, fields, tundra, meadows, savannah,  
16 and open woodlands. Its primary prey is small rodents, but it will also take small birds and insects.  
17 Short-eared owl was observed in EUL Study Area in 2013, but the individual may have been a  
18 migrant rather than nesting in the area. Nesting was suspected once in the Antelope Valley, but this  
19 species is not known to nest in desert scrub habitats in California (Roberson, 2008).

20 The **burrowing owl** (*Athene cunicularia*) is typically found in dry open areas with few trees and  
21 short grasses, as well as disturbed open habitats like agricultural fields. Burrowing owls use  
22 uninhabited burrows for roosts and nests and primarily feed on large insects. Burrowing owls and  
23 their sign were observed throughout the EUL Study Area in 2012. This species likely nests in the  
24 EUL Study Area during the breeding season (February 1 to August 31) with solitary individuals  
25 located year-round. A total of 30 occupied burrows were observed and recorded (ECORP, 2013).

26 The **ferruginous hawk** (*Buteo regalis*) is typically found in prairies and plains, but is also found  
27 in sagebrush and desert habitats. Its diet primarily consists of mammals, including ground squirrels  
28 and jackrabbits. This species does not nest in California and does not typically forage in desert  
29 scrub. Ferruginous hawk in the Antelope Valley typically forage in and around agricultural fields  
30 and grasslands. This species is a frequent resident of southern California deserts during winter  
31 months (ECORP, 2013).

32 The **mountain plover** (*Charadrius montanus*) uses open grasslands, plowed fields with little  
33 vegetation, and open sagebrush areas to forage and roost. Its diet consists of insects. There are no  
34 records of this species nesting in California, although they have been recorded throughout the desert  
35 areas during migratory periods. Suitable habitat areas in the EUL Study Area would include the  
36 disturbed areas that support annual grasses in the northwestern corner and the open playas near the  
37 center, which is very limited in the EUL Study Area.

38 The **northern harrier** (*Circus cyaneus*) is found in a range of habitats, including deserts, coastal  
39 sand dunes, pasturelands, croplands, dry plains, grasslands, and old agricultural fields; and forages  
40 in open areas typically dominated by low-growing vegetation with available perches such as fence

1 posts or sturdy shrubs nearby. Its diet consists of small- to medium-sized vertebrates such as  
2 songbirds and rodents (CDFG, 2008). The EUL Study Area is outside of the known nesting range  
3 of the species (Davis and Niemela, 2008), but individuals may forage in the EUL Study Area and  
4 recent records are found within 5 miles.

5 The **prairie falcon** (*Falco mexicanus*) is found primarily in open areas such as plains and prairies  
6 with steep vertical cliffs for nesting. Its diet includes small mammals, lizards, and birds. Although  
7 abundant foraging habitat is present within the EUL Study Area, there is no suitable nesting habitat.

8 The **loggerhead shrike** (*Lanius ludovicianus*) prefers open areas with scattered trees and shrubs,  
9 including savannah, desert scrub, and open woodland habitats. Its diet includes large insects and  
10 other invertebrates, but it will also prey upon small mammals, lizards, and snakes. Suitable foraging  
11 and nesting habitat is present throughout the EUL Study Area.

12 The **Townsend's big-eared bat** (*Corynorhinus townsendii*) can be found in many different  
13 habitats, including desert scrubs, and uses caves, mines, and buildings for roosts. Its diet consists  
14 primarily of flying insects, particularly moths. This species has been detected at Soledad Mountain  
15 approximately 3 miles west of the EUL Study Area and, although suitable roosting habitat is not  
16 present within the EUL Study Area, this species may forage at the site.

17 The **American badger** (*Taxidea taxus*) is a Species of Concern and a species with additional  
18 protections as a fur-bearing mammal. This species is found in a wide variety of habitats that support  
19 sparse groundcover. Badgers feed primarily on small rodents. This species was detected throughout  
20 the EUL Study Area in 2013 (ECORP, 2013).

21 The **desert kit fox** (*Vulpes macrotis arsipus*) is found in desert habitats, including all of those  
22 present at the EUL Study Area. Desert kit foxes feed primarily on nocturnal rodents and rabbits.  
23 This species was detected throughout the EUL Study Area in 2013 (ECORP, 2013). While not a  
24 listed or special-status species, desert kit foxes are protected as a fur-bearing mammal in California  
25 and have been the subject of heightened concern to CDFW in the past several years after an  
26 outbreak of canine distemper killed a number of animals in the eastern California desert areas  
27 (personal communication, Dr. Deanna Clifford, CDFW).

28 The **southern grasshopper mouse** (*Onychomys torridus ramona*) is found in desert habitats,  
29 including all of those present at the EUL Study Area. Southern grasshopper mice are carnivorous,  
30 feeding on insects and other small mammals. This species was detected throughout the EUL Study  
31 Area during trapping studies conducted throughout Edwards AFB in 2008 and the likelihood is  
32 high that they continue to inhabit the area.

### 33 Sensitive Habitats

34 No critical habitat for federally or State listed (endangered or threatened) species is present within  
35 the EUL Study Area.

36 Ephemeral drainages are present within the EUL Study Area. These drainages are not USACE-  
37 jurisdictional under the approved determination issued for the Sunlight Partners Solar Array Project  
38 on June 7, 2013 (USACE, 2013). A jurisdictional delineation has been conducted on 3,032 acres

1 of the EUL Study Area (Dudek, 2018b) for waters of the state. In the 3,032-acre portion of the EUL  
2 Study Area where a formal jurisdictional delineation was completed, there are approximately 9.4  
3 acres of ephemeral, non-vegetated swales under the jurisdiction of CDFW and RWQCB.

4 In the remainder of the EUL Study Area, a map-based analysis of the site has been done, as  
5 described above. Based on the NWI data (USFWS, 2017), 215 acres of CDFW- and RWQCB-  
6 jurisdictional waters are potentially present. However, based on the formal jurisdictional  
7 delineation performed on a portion of the EUL Study Area, it is likely that there are actually fewer  
8 jurisdictional features in the area not yet subject to field assessment. The developer has indicated  
9 an intent to avoid jurisdictional areas if feasible. A pre-project jurisdictional delineation in the field  
10 in areas where map-based analysis was performed would refine the location and extent of any  
11 additional jurisdictional resources, and where they can be avoided or impacts reduced. If avoidance  
12 is not feasible, it is anticipated that the impacts to waters of the state would be small (less than 1  
13 acre.) Additional information related to Waters of the United States, state jurisdictional waters, and  
14 waters regulated by RWQCB are found in Section 3.16, *Hydrology and Water Quality Resources*,  
15 of this EIS/EIR.

16 No valley needlegrass grasslands are present within the EUL Study Area.

17 Approximately 1,047 acres of Joshua tree woodlands are present in the EUL Study Area  
18 (Figure 3.5-1).

#### 19 **Wildlife Movement Corridors**

20 The partially unimpeded open nature of the EUL Study Area currently allows for easy movement  
21 of wildlife through the area. Surveys conducted in 2012, 2013, 2017, and 2018 did not record  
22 significant pathways of tracks for larger species that might be considered regional wildlife  
23 movement corridors. Larger wildlife species are somewhat restricted from moving north and west  
24 of the EUL Study Area because of an 8-foot tall chain-link fence along the western EUL Study  
25 Area boundary that extends approximately 2.5 miles east of the northwest corner of the EUL Study  
26 Area (the remaining northern boundary is barbed wire fencing). Many larger mammals and desert  
27 tortoises would still be able to move through this fence using holes under the fence (tortoises,  
28 coyotes) or jumping over the fence (large cats, kit foxes).

#### 29 **Local Setting – Gen-Tie Study Area**

30 The Gen-Tie Study Area is the larger area within which the project’s gen-tie line would be built.  
31 Surveys were conducted in the Gen-Tie Study Area in 2017 (Dudek, 2018a) and were used to  
32 determine the potential for these resources to be present.

### 33 **General Biological Resources**

#### 34 **Vegetation Communities**

35 Vegetation communities in the Gen-Tie Study Area are shown on Figures 3-1A through 3-1AA in  
36 Appendix B4. Acreages are also provided in **Table 3.5-6**. The dominant vegetation communities  
37 within the Gen-Tie Study Area are creosote bush scrub, allscale scrub, non-native grassland, and  
38 Joshua tree woodland. In addition, portions of the Gen-Tie Study Area have been disturbed from

1 previous land uses and these areas support non-native plant species, including Russian thistle, salt  
2 cedar trees, and non-native grasses.

3  
4

**TABLE 3.5-6  
VEGETATION COMMUNITIES IN THE GEN-TIE STUDY AREA**

Community	East– West (acres)	North–South Option 1 (acres)	North–South Option 2 (acres)
Allscale Scrub	57	239	5
Rubber Rabbitbrush Scrub	1	—	—
Non-native Grassland	84	—	—
Cheesebush Scrub	—	26	—
Creosote Bush Scrub	363	17	15
Creosote Bush Scrub–White Burr Sage Scrub	—	—	1
Joshua Tree Woodland	17	18	—
White Bursage	—	12	—
Disturbed Habitat	57	13	33
Urban/Developed	21	1	—

5

6 **Wildlife Resources**

7 Due to the lack of a perennial water source and habitat types present, no fish or amphibian species  
8 are expected in the Gen-Tie Study Area. General wildlife resources are likely to be similar to those  
9 described for the region and EUL Study Area.

10 **Special-Status Biological Resources**

11 This section of the EIS/EIR examines the 18 plant and 21 wildlife species identified in the Regional  
12 Setting that were initially determined to have potential to occur in the Gen-Tie Study Area. The  
13 potential to occur was based on the following criteria:

- 14 • **Present:** Species was observed in or immediately adjacent to the Gen-Tie Study Area during a  
15 site visit or focused survey within the past 5 years.
- 16 • **High:** Habitat (including soils and elevation factors) and known historical range for the species  
17 occurs in the Gen-Tie Study Area and a known occurrence has been recorded within 5 miles  
18 within the past 20 years.
- 19 • **Moderate:** Habitat for the species occurs in the Gen-Tie Study Area and a known occurrence  
20 exists in the database search, between 5 and 10 miles away, recorded within the past 20 years.
- 21 • **Low:** Limited or no habitat for the species occurs in the Gen-Tie Study Area and a known  
22 occurrence is greater than 10 miles from the Gen-Tie Study Area or over 20 years old (as many  
23 focused botanical and wildlife surveys have been conducted within the project region in the  
24 past 20 years).

1 Special-Status Plants

2 **Table 3.5-7** lists the potential for special-status plants to occur at the Gen-Tie Study Area and an  
 3 explanation of how that level of potential was determined. Species with a moderate or higher  
 4 potential to occur are discussed in more detail. Special-status plants that are not expected to occur  
 5 due to lack of suitable vegetation or because the site is outside of the known elevation range of the  
 6 species are listed in Appendix B4. These species are not discussed further because no significant  
 7 direct, indirect, or cumulative impacts are expected to result from the proposed project.

8 **TABLE 3.5-7**  
 9 **SPECIAL-STATUS PLANT SPECIES POTENTIAL TO OCCUR IN THE GEN-TIE STUDY AREA**

Species	Status	Potential to Occur	Explanation
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	US: – CA: – CRPR: 1B.1	Low	Not observed. Conspicuous perennial herb that would have been detected during focused surveys if present.
<i>California macrophylla</i> round-leaved filaree	US: – CA: – CRPR: 1B.2	Low	Not observed. Species was detectable at time of focused survey based on reference population checks.
<i>Calochortus striatus</i> alkali mariposa-lily	US: – CA: – CRPR: 1B.2	Low	Not observed. Species was detectable at time of focused survey based on reference population checks.
<i>Canbya candida</i> white pygmy poppy	US: – CA: – CRPR: 4.2	Low	Suitable habitat is present in the Gen-Tie Study Area with a record approximately 5 miles away, but was last recorded in 1935 and 1965.
<i>Chorizanthe spinosa</i> Mojave spineflower	US: – CA: – CRPR: 4.2	Low	Suitable habitat is present throughout the Gen-Tie Study Area in Joshua tree woodlands and allscale scrub communities and multiple populations have been recorded within 1 mile. However, this species was not observed during focused surveys.
<i>Cymopterus deserticola</i> desert cymopterus	US: – CA: – CRPR: 1B.2	Low	Not observed. Species was detectable at time of focused survey based on reference population checks.
<i>Delphinium recurvatum</i> recurved larkspur	US: – CA: – CRPR: 1B.2	Low	Not observed. Species was detectable at time of focused survey based on reference population checks.
<i>Eriastrum rosamondense</i> Rosamond eriastrum	US: – CA: – CRPR: 1B.1	Low	Not observed. Closest known occurrence is located 13 miles away. Species is typically found on hard packed sandy cryptogamic soil among low hummocks with dry pools, which is not present in the study area (Jepson Flora Project 2017).
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	US: – CA: – CRPR: 1B.2	Low	Not observed. Closest known occurrence is located 6 miles away and suitable habitat present. However, 2017 results were negative.
<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i> Red Rock poppy	US: – CA: – CRPR: 1B.2	Low	Not observed. Closest known occurrence is located 12 miles away on Edwards AFB. Volcanic tuff not present.
<i>Layia heterotricha</i> pale-yellow layia	US: – CA: – CRPR: 1B.2	Low	Not observed. Closest known occurrence is located 4 miles away and suitable habitat present. However, 2017 results were negative.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	US: – CA: – CRPR: 2B.2	Low	Not observed. Closest known occurrence is located 1 mile away and suitable habitat present. However, 2017 results were negative.

Species	Status	Potential to Occur	Explanation
<i>Navarretia setiloba</i> <i>Piute Mountains navarretia</i>	US: – CA: – CRPR: 1B.1	Low	Not observed. Species was detectable at time of focused survey based on reference population checks.
<i>Phacelia nashiana</i> Charlotte's phacelia	US: – CA: – CRPR: 1B.2	Low	Suitable habitat is present throughout the Gen-Tie Study Area in habitats with sandy soils; however, the nearest populations have been documented approximately 11 miles to the north.
<i>Puccinellia simplex</i> California alkali grass	US: – CA: – CRPR: 1B.2	Low	Not observed. Closest known occurrence is located 11 miles away on Edwards AFB. This species occurs on moist alkaline soils on alkali flats and around alkaline vernal pools (Twisselmann, 1995), which is not present in the study area.
<i>Saltugilia latimeri</i> <i>Latimer's woodland-gilia</i>	US: – CA: – CRPR: 1B.2	Low	Not observed. Closest known occurrence is located 7 miles away and suitable habitat present. However, 2017 results were negative.
<i>Senna covesii</i> <i>Coves' cassia</i>	US: – CA: – CRPR: 2B.2	Low	Not observed. Closest known occurrence is located 17 miles away on Edwards AFB.

US: Federal Designations  
 E: Federally listed, endangered

CA: State Designations  
 E: State-listed, endangered

California Rare Plant Rank (CRPR) designations (CDFW, 2018b):  
 1A. Presumed extirpated in California and either rare or extinct elsewhere  
 1B. Rare or Endangered in California and elsewhere  
 2A. Presumed extirpated in California, but more common elsewhere  
 2B. Rare or Endangered in California, but more common elsewhere  
 3. Plants for which we need more information - Review list  
 4. Plants of limited distribution - Watch list

CRPR extension meanings (i.e., Threat Ranks) (CDFW, 2018b):  
 1 Seriously endangered in California (over 80 percent of occurrences threatened or have high degree and immediacy of threat).  
 2 Fairly endangered in California (20–80 percent occurrences threatened).

1 **Mojave spineflower** has suitable habitat in the allscale scrub communities east of SR 14 within  
 2 the Gen-Tie Study Area. This species was not observed during surveys of the Gen-Tie Study Area.  
 3 While there are multiple known populations within 2 miles, it has been determined that this species  
 4 has a low potential to occur because, if present, the species would have been detectable during the  
 5 focused special-status plant survey (Dudek 2017).

#### 6 Special-Status Wildlife

7 **Table 3.5-8** lists the potential for special-status wildlife species to occur at the Gen-Tie Study Area  
 8 and an explanation of how that level of potential was determined. Species with a moderate or higher  
 9 potential to occur, (except for Mohave ground squirrel, which has a low potential to occur), are  
 10 discussed in more detail. Special-status wildlife species that occur in the region but that are not  
 11 expected to occur in the study area, due for example, to a lack of suitable habitat, for example, are  
 12 included in Appendix B4. These species are not discussed further because no significant direct,  
 13 indirect, or cumulative impacts are expected to result from the proposed project.

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**TABLE 3.5-8  
SPECIAL-STATUS WILDLIFE SPECIES POTENTIAL TO OCCUR IN THE GEN-TIE STUDY AREA**

Species	Status	Potential to Occur	Explanation
<b>REPTILES</b>			
<i>Anniella pulchra</i> northern California legless lizard	US: – CA: SSC	Low	Not observed, and unlikely to be detected incidentally during surveys for other resources. Low potential to occur in most of the Gen-Tie Study Area, as the study area is at the edge of the species range. However, this species was observed 1.0 mile south of East–West Route (Options A and B) during surveys for the Mojave West Solar Project (County, 2014).
Gopherus desert tortoise	US: T CA: T	Present	Scat (year old) and burrow showing recent sign of use north of Trotter Avenue and just east of North–South Route Option 1, during surveys in spring 2017 (see Figure 3-2 in Appendix B4). Although not observed elsewhere, high to moderate potential to occur. Additional CNDDDB occurrences are from as near as 0.3 miles from the Gen-Tie Study Area (CDFW, 2017).
<b>BIRDS</b>			
<i>Aquila chrysaetos</i> golden eagle	US: BGEPA, BCC CA: FP	Low (Nesting) Moderate (Wintering and Dispersal)	Not observed. The nearest CNDDDB occurrence is approximately 2.3 miles from Option 2 (1.8 miles southwest of the intersection of SR 14 and Silver Queen Road), although the location is not known to have been occupied since 1969 (CDFW, 2017). The next nearest occurrence is from 9.0 miles north of East–West Options (A and B). Generally expected to nest in the Tehachapi Mountains, to the north and west, and potentially occur in the vicinity in winter and during dispersal.
<i>Athene cunicularia</i> burrowing owl	US: BCC CA: SSC	Moderate	Not observed, but focused surveys were not conducted. Although not seen in the Gen-Tie Study Area, individuals were observed at 3 different locations between approximately 0.5 and 1.0 mile from North–South Route Option 1 during surveys. The nearest CNDDDB occurrence is from within 0.5 miles of both Option 2 and the main East–West route, near United Street and Purdy Avenue. Suitable habitat is present in much of the Gen-Tie Study Area.
<i>Buteo regalis</i> ferruginous hawk	US: BCC CA: WL	Moderate (Wintering Migration)	and Surveys were not conducted at an appropriate time to detect this species. Moderate potential to occur on occasion during winter or migration. The nearest CNDDDB occurrence is from approximately 6.8 miles to the south–southwest.
<i>Buteo swainsoni</i> Swainson’s hawk	US: BCC CA: T	Low (Nesting) Present (Dispersal and Migration)	Not expected to nest in the vicinity and nesting not observed during surveys. Observed once, in April 2017, over the main East–West Option Route, during migration. The nearest CNDDDB occurrences are 6.8 and 7.2 miles south–southwest (CDFW, 2017).
<i>Falco mexicanus</i> prairie falcon	US: BCC CA: WL	Moderate (Foraging)	Not observed and not expected to nest. Moderate potential to forage during the nesting season. Suitable nesting habitat likely occurs at Soledad Mountain. CNDDDB does not provide specific locations for occurrences of this species.
<i>Lanius ludovicianus</i> loggerhead shrike	US: BCC CA: SSC	Present	Observed along the main East–West Option (Options A and B), along North–South Route Option 1 (including and active nest), and regularly in the vicinity. Extensive suitable habitat is present in Joshua tree woodland.
<i>Spinus lawrencei</i> Lawrence’s goldfinch	US: BCC CA: –	Moderate (Nesting)	Not observed. Moderate potential to occur, especially near existing development.

Species	Status	Potential to Occur	Explanation
Toxostoma lecontei Le Conte's thrasher	US: BCC CA: SSC	Present	Observed along North–South Option 1 and along the main East–West Route (Options A and B) during surveys. Also observed generally in Joshua tree woodland and other desert scrub communities in the vicinity during Swainson's hawk surveys.
<b>MAMMALS</b>			
Antrozous pallidus pallid bat	US: – CA: SSC	High (Foraging)	Not expected to roost, but high potential to forage. Although CNDDDB includes no occurrences in the area, the species recorded during surveys of Soledad Mountain, southwest of the intersection of SR 14 and Silver Queen Road, in 1990 and 1996 (Brown-Berry, 2007). Bats roosting in this area or in nearby human-made structures potentially forage over the Gen-Tie Study Area.
Corynorhinus townsendii Townsend's big-eared bat	US: – CA: SSC	High (Foraging Only)	Not expected to roost, but high potential to forage. The species has been detected roosting in abandoned mine shafts within approximately 0.6 mile of North–South Gen-Tie Route Option 3, as recently as 2006 (CDFW, 2017; Brown-Berry, 2007).
Euderma maculatum spotted bat	US: – CA: SSC	Low (Low Foraging)	Not expected to roost and low potential to forage. CNDDDB includes no occurrences in the area, but the Gen-Tie Study Area is within the range of the species. Suitable roosting habitat likely occurs nearby, such as at Soledad Mountain southwest of - SR 14 and Silver Queen Road, and suitable foraging habitat is present in the Gen-Tie Study Area.
Perognathus inexpectatus Tehachapi pocket mouse	US: – CA: SSC	Moderate	The nearest CNDDDB occurrences are three occurrences between 1.8 and 2.2 miles north of East–West (Options A and B). Except for the extreme westernmost areas, which are nearest the Tehachapi foothills, most of the Gen-Tie Study Area is farther east and below the expected elevation of this species. Therefore, it is unlikely to occur in any of the north-south gen-tie route options. Suitable habitat occurs where the East–West options are nearest the known range, but this species has only a low potential to occur here.
Taxidea taxus American badger	US: – CA: SSC	Present	Observed during Swainson's hawk surveys approximately 3.5 miles west southwest of East–West (Options A and B). High potential to occur. CNDDDB includes an occurrence approximately 5.7 miles north of East–West (Options A and B), and suitable habitat is widespread in the vicinity.
Vulpes arsipus desert kit fox	US: – CA: FBM	Present	A natal den and an additional burrow with sign were observed along North–South Gen-Tie Route Option 1 in the spring 2017. Suitable habitat is present elsewhere.
Xerospermophilus mohavensis Mohave ground squirrel	US: – CA: T	Low	Numerous surveys in the vicinity of the gen-tie line show an absence of this species (Leitner, 2015). The lack of occurrence records in and near the gen-tie support the conclusion that there is a low potential for species to occur along the gen-tie (Leitner, 2008, 2015).

1

2 Federally and State Listed Species

3 **Desert tortoise** was not directly observed during focused protocol-level surveys of the Gen-Tie  
4 Study Area. However, sign of desert tortoise was observed twice along North–South Gen-Tie Route  
5 Option 1, near the southern end of the route. During surveys in spring 2017, biologists observed a

1 desert tortoise burrow with sign of recent use, including tracks, and observed older scat at a separate  
2 location. Suitable habitat is present over much of the study area.

3 **Swainson's hawk** protocol surveys (CEC and CDFG, 2010) were conducted within the Gen-Tie  
4 Study Area. Although suitable nesting habitat was observed widely across the Swainson's hawk  
5 survey area, no Swainson's hawk nests and no evidence of Swainson's hawk nesting were  
6 observed. Swainson's hawks were observed on two occasions, and different locations, during  
7 surveys; however, the individuals were determined to be transient in the area either as a migrant or  
8 during dispersal.

9 **A Mohave ground squirrel** habitat assessment for the species was conducted that covered all gen-  
10 tie options. Low- and moderate-quality suitable habitat was observed throughout this area (Brylski,  
11 2018b). However, Mohave ground squirrel is not known to occur west of SR 14 in the vicinity of  
12 the Gen-Tie Study Area (Leitner, 2008; Leitner, 2015). The closest CNDDDB identification of  
13 individuals of this species is approximately 5 miles away in 1987 (CDFW, 2018a). A  
14 comprehensive study of squirrel occurrences from 2008 to 2012 (Leitner, 2015) shows the closest  
15 occurrences to be approximately 9 miles to the east and the southwest. The most likely route options  
16 for the gen-tie line also traverse land already disturbed with roads, wind turbines, and existing solar  
17 fields. Areas where the gen-tie crosses less disturbed land are west of SR 14, where numerous  
18 studies show an absence of this species.

#### 19 *Other Special-Status Species*

20 **Golden eagle** was not observed during surveys of the Gen-Tie Study Area. Focused surveys were  
21 not conducted, although it's likely the species would have been detected during surveys,  
22 particularly during Swainson's hawk surveys, if present within 5 miles of the study area. The  
23 CNDDDB includes an occurrence mapped generally in the Soledad Mountain area, approximately  
24 2.3 miles from Option 2; however, this territory was last known to be occupied in 1969. Currently,  
25 an open-pit heap-leach gold and silver mine operation occupies the north slope of Soledad  
26 Mountain, between all gen-tie route options and any remaining suitable nesting habitat in the area.  
27 The next nearest occurrences are from the Tehachapi Mountains (CDFW, 2017).

28 **Burrowing owl** focused surveys were not conducted in the Gen-Tie Study Area, although the  
29 species is typically detectable during the morning hours, when many surveys took place. No  
30 burrowing owls were detected in the Gen-Tie Study Area during surveys, although several were  
31 detected within 1 mile of North-South Route Option 1, and CNDDDB includes an occurrence within  
32 approximately 0.5 mile of North-South Route Option 2, near the intersection of United Street and  
33 Purdy Avenue. Suitable habitat is present in much of the Gen-Tie Study Area.

34 **Ferruginous hawk** was not observed during surveys of the Gen-Tie Study Area, but surveys were  
35 not conducted at an appropriate time of year for detecting ferruginous hawks. CNDDDB includes  
36 several occurrences in the vicinity, but this database greatly underrepresents reports of this species.  
37 Garrett and Dunn (1981) considered the Antelope Valley to be an important wintering area for the  
38 species in California, although most likely winter closer to agricultural areas, which are absent near  
39 the study area, and grasslands, which are sparse.

1 The **Le Conte's thrasher** (*Toxostoma lecontei*) is a resident in low to middle elevations in the  
2 deserts of eastern California and within a limited, disjunct range in the western San Joaquin Valley  
3 and adjacent smaller valley, from southwestern Fresno County southward (Grinnell and Miller,  
4 1944; Fitton, 2008). They occur in open scrub habitats, usually with sandy soils or in alkaline  
5 terrain, including desert washes, creosote scrub, alkali desert scrub, desert succulent scrub, Joshua  
6 tree habitats, and (in the San Joaquin Valley) saltbush scrub (Grinnell and Miller, 1944; Fitton,  
7 2008). They feed mostly on a variety of insects and arthropods, but also on lizards and other small  
8 vertebrates. Le Conte's thrashers were observed regularly in the Gen-Tie Study Area within desert  
9 scrub habitats with scattered Joshua trees during surveys, including along the main East–West Gen-  
10 Tie Route Option and North–South Gen-Tie Route Option 1. Suitable habitat also occurs within or  
11 near North–South Option 2.

12 The **Lawrence's goldfinch** (*Spinus lawrencei*) is locally common along the western edge of the  
13 southern deserts, from Santa Clara and Monterey Counties south through coastal slopes, and  
14 occasionally surrounding the foothills of the Central Valley (Zeiner et al., 1990). The Lawrence's  
15 goldfinch prefers valley foothill woodlands and hardwood conifer forests, Southern California  
16 desert riparian, palm oasis, pinyon–juniper, and lower montane areas. This species was not  
17 observed during surveys. It is relatively unlikely to nest in most of the Gen-Tie Study Area,  
18 although it has moderate potential to nest near existing development, such as occurs near portions  
19 of the North–South Gen-Tie Route Options 1 and 2, where they may be attracted to moister areas  
20 around exotic plantings.

21 **Loggerhead shrike** was observed in several locations within the Gen-Tie Study Area, including  
22 along the main East–West Gen-Tie Route Option (where an adult was observed with a juvenile  
23 west of SR 14), along the northern portion of North–South Gen-Tie Route Option 1 (a family group  
24 near a nest structure), and regularly in the vicinity. Extensive suitable habitat, particularly in Joshua  
25 tree woodland, is present in the study area.

26 **Prairie falcon** was not observed in the Gen-Tie Study Area. Although focused surveys for this  
27 species were not conducted, it's likely it would have been detected during Swainson's hawk  
28 surveys, if nesting within 5 miles of the study area. Nesting habitat is absent in the Gen-Tie Study  
29 Area, although suitable nesting sites likely occur nearby in the Soledad Mountain area, near North–  
30 South Gen-Tie Route Option; however, current gold and silver mining operations on the north slope  
31 of the mountain limit the likelihood of the species nesting there. Prairie falcons does have the  
32 potential to forage in the Gen-Tie Study Area, especially during the non-nesting season.

33 The **pallid bat** (*Antrozous pallidus*) occurs throughout California, except at the highest elevations  
34 of the Sierra Nevada range. Although this species prefers rocky outcrops, cliffs, and crevices with  
35 access to open communities and land covers for foraging, it has been observed far from such areas  
36 (Hermanson and O'Shea, 1983). Foraging habitats for pallid bats are varied and include grasslands,  
37 oak savannahs and woodlands, riparian woodland, open pine forests, talus slopes, desert scrub, and  
38 agricultural areas. Focused surveys were not conducted for bats in the survey area. However, pallid  
39 bats have detected at Soledad Mountain, within 2.0 miles of North–South Gen-Tie Route Option  
40 2.

1 The **Tehachapi pocket mouse** (*Perognathus alticolus inexpectatus*) is an SSC that occurs from  
2 the Tehachapi Pass area (northwest of Mojave) southwest to the Mount Pinos area on the boundary  
3 of Kern and Ventura Counties and the Lake Hughes area in northern Los Angeles County. It  
4 apparently is associated with arid annual grassland and desert scrub communities (Williams, 1986).  
5 Known occurrences are mostly above 3,400 feet above mean sea level (amsl). The CNDDDB  
6 includes three occurrences between 1.8 and 2.2 miles north of East–West Gen-Tie Route (Options  
7 A and B). Except for the extreme westernmost areas, which are nearest the Tehachapi foothills,  
8 most of the study area is farther east and below the expected elevation of this species. Therefore, it  
9 is unlikely to occur in any of the north-south gen-tie route options. Suitable habitat occurs where  
10 the East–West options are nearest the known range, but the species has a low potential to occur  
11 here.

12 **American badger** was not observed in the Gen-Tie Study Area; however, a single badger was  
13 observed at burrow entrance approximately 3.5 miles west southwest of East–West Gen-Tie Route  
14 Options A and B in April 2017, and CNDDDB includes an occurrence approximately 5.7 miles north  
15 of East–West Gen-Tie Route Options A and B. Suitable habitat for the species is present throughout  
16 the Gen-Tie Study Area.

17 **Desert kit fox** was observed once in the Gen-Tie Study Area, when an active natal den was  
18 observed along North–South Gen-Tie Option 1 in the spring 2017. Desert kit fox sign (tracks) was  
19 observed around a suitable burrow at one other location along Option 1 in the spring 2017. Desert  
20 kit fox have a high potential to occur elsewhere in the Gen-Tie Study Area, particularly within the  
21 East–West Gen-Tie Route.

## 22 *Sensitive Habitats*

23 No critical habitat for federally or state listed (endangered or threatened) species is present within  
24 the Gen-Tie Study Area.

25 The Gen-Tie Study Area is located east of the Tehachapi Mountains and south of Sugarloaf  
26 Mountain and is relatively flat, gradually sloping downward from the northwest to the southeast.  
27 Rogers Lake, a closed drainage basin, together with the adjacent smaller Rosamond and Buckthorn  
28 Lake, make up the largest water feature in the study area vicinity. Drainages within the Gen-Tie  
29 Study Area originate from flows from the Tehachapi and Sugarloaf Mountains, road runoff, or  
30 sheet-flow, and either dissipate into the desert floor evaporating or infiltrating into the groundwater  
31 basin or continue to flow to Rogers Lake during larger storm events. The results of the jurisdictional  
32 delineation concluded there are non-wetland state-jurisdictional waters within the study area.

33 Approximately 2.16 acres (14,614 linear feet) of waters of the state occur within the study area.  
34 CDFW- and RWQCB-jurisdictional areas present include ephemeral stream channels and swales.  
35 **Table 3.5-9** includes the acres and linear feet of CDFW- and RWQCB jurisdictional non-wetland  
36 waters within the study area and also includes the periodicity of the non-wetland waters of the state  
37 on site (i.e., ephemeral or intermittent).

38 A total of 10 features were recorded within the East–West Gen-Tie Route (Options A and B)  
39 totaling approximately 1.78 acres (10,630 linear feet) of CDFW- and RWQCB-jurisdictional non-

1 wetland waters. The drainages tend to follow the existing topography and flow from northwest to  
2 southeast. All drainage boundaries were demarcated based on the presence of fluvial and erosion  
3 indicators, including change in vegetation cover, break in bank slope, drift and/or debris, surface  
4 relief/ drainage swale, sediment sorting, debris wracking, and scour. None contained hydrophytic  
5 vegetation or hydric soils.

6 A total of two features were recorded within the North–South Option 1 Route totaling  
7 approximately 0.27 acres (2,161 linear feet) of CDFW- and RWQCB-jurisdictional non-wetland  
8 waters. The two drainages follow the existing topography and flow from northwest to southeast  
9 and north to southeast. These features were swale-like exhibiting surface relief and contained  
10 hydrology indicators such as mudcracks, drift and/or debris, and wracking. None contained  
11 hydrophytic vegetation or hydric soils.

12  
13

**TABLE 3.5-9  
JURISDICTIONAL WATERS OF THE STATE IN THE STUDY AREA**

Jurisdiction	East–West Gen-Tie Route		North–South Gen-Tie Option 1		North–South Gen-Tie Option 2		Total	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Non-wetland Waters of the State (RWQCB/ CDFW) – Ephemeral	1.78	10,630	0.27	2,161	<0.01	12	2.05	12,803

14

15 One feature was recorded within the North–South Option 2 Route totaling approximately <0.01  
16 acre (12 linear foot) of CDFW- and RWQCB-jurisdictional non-wetland waters. This drainage  
17 swale follows the existing topography, flowing northwest to southeast, and was recorded  
18 immediately adjacent to United Street, which has cut off connectivity. A culvert is located on the  
19 west/east sides of United Street; however, grading has appeared to cut off access, and these culverts  
20 are almost completely clogged by soil and vegetation. This feature did not contain hydrophytic  
21 vegetation or hydric soils.

22 No valley needlegrass grasslands or wildflower fields are present within the Gen-Tie Study Area.  
23 Joshua tree woodlands are present in the Gen-Tie Study Area. This community primarily occurs in  
24 the northwestern portion of the Gen-Tie Study Area, near the Windhub Substation.

25 **Wildlife Movement Corridors**

26 The study area is largely undeveloped with an open landscape and thus wildlife can move freely  
27 throughout the area. In addition, wildlife can utilize dirt roads within the study area can act to move  
28 throughout the area. Constraints to wildlife movement include SR 14, Oak Creek Road, several  
29 other paved roads, an existing substation, wind turbines, the Southern Pacific Railroad, and  
30 scattered rural residential areas. While these features may constrain wildlife movement, the low  
31 traffic volume, along with light human presence, likely does not preclude wildlife from utilizing  
32 the study area and surrounding areas.

1 **3.5.2.2 Assessment Methods/Methodology**

2 Biological resources that are addressed in this section of the EIS/EIR include those identified in  
3 Section 3.5.1, *Environmental Setting*, as being present in the Local Setting for the EUL and Gen-  
4 Tie Study Areas. Section 3.5.4, *Cumulative Impact Analysis*, addresses those resources identified  
5 in the larger Regional Setting.

6 This section of the EIS/EIR presents the impact significance criteria that were used for analysis,  
7 followed by a discussion of impacts. Under each alternative, the NEPA discussion of impacts is  
8 presented in the following order:

- 9 • Construction
- 10 • Operations and Maintenance
- 11 • Decommissioning

12 Within each of these sections, the following resources are included, as discussed in the Local  
13 Setting sections of this document:

- 14 • General vegetation communities and wildlife
- 15 • Special-status plants identified as having a moderate or better potential to occur in the  
16 project study areas are denoted with an “X,” as shown below:

Species (common name)	EUL Study Area	Gen-Tie Study Area
Alkali mariposa lily	X	—
Mojave spineflower	X	—
Desert cymopterus	X	—
Recurved larkspur	X	—
Barstow woolly sunflower	X	—
Sagebrush loeflingia	X	—

- 17 • Special-status wildlife identified as having a moderate or better potential to occur in the  
18 project study areas are denoted with an “X,” as shown below (those in **bold** are federally  
19 and/or state listed endangered and/or threatened species). The portion of the species life  
20 history that is considered sensitive is noted if applicable.

Common Name (Sensitive Portion of Life History)	EUL Study Area	Gen-Tie Study Area
<b>Desert tortoise</b>	<b>X</b>	<b>X</b>
Golden eagle (nesting and wintering)	X	X
Short-eared owl (nesting)	X	—
Burrowing owl (burrow site and some wintering sites)	X	X
Ferruginous hawk (wintering)	X	X
<b>Swainson’s hawk (nesting)</b>	—	—
Mountain plover (wintering)	—	—

Common Name (Sensitive Portion of Life History)	EUL Study Area	Gen-Tie Study Area
Northern harrier (nesting)	—	—
Prairie falcon (nesting)	—	—
Loggerhead shrike (nesting)	X	X
Lawrence's goldfinch (nesting)	—	X
Le Conte's thrasher (nesting)	X	X
Townsend's big-eared bat	X	X
Tehachapi pocket mouse	—	—
American badger	X	X
Desert kit fox	X	X
<b>Mohave ground squirrel</b>	—	—

1  
2

- Sensitive habitats, as shown below:

Sensitive Habitat	EUL Study Area	Gen-Tie Study Area
Jurisdictional waters of the state	X	X
Joshua tree woodlands	X	X

- Wildlife Movement Corridors, which are present in both the EUL and Gen-Tie Study Areas

4 In each subsection, direct impacts are presented followed by indirect impacts, and then gen-tie  
5 impacts where they may differ from those in the EUL Study Area. After each discussion of a  
6 potentially significant impact, the mitigation measures that relate to that impact are presented,  
7 followed by a determination of the level of significance after mitigation.

8 Following the discussion of NEPA potentially significant impact criteria, a section on the CEQA  
9 significance criteria is presented and each discussion of a potentially significant impact is related  
10 to either the pertinent discussion under the NEPA impact discussion or the mitigation measures that  
11 relate to that impact are presented, followed by a determination of the level of significance after  
12 mitigation.

13 Mitigation measures themselves are described in detail in Section 3.5.5, *Mitigation Measures*.  
14 Section 3.5.4, *Cumulative Impact Analysis*, describes cumulative impacts, and Section 3.5.6,  
15 *Residual Impacts After Mitigation*, identifies residual impacts after implementation of the  
16 mitigation measures. Mitigation measures have been separated into two groups; one group that  
17 applies to the solar facility portion of the project site and one group that applies to the gen-tie  
18 portion of the project site. This is indicated by either a lowercase 'a' for the solar facility or a  
19 lowercase 'b' for the gen-tie at the end of the mitigation measure number.

### 20 3.5.2.3 Determination of Impacts/Thresholds of Significance

21 For this analysis, an environmental impact was significant related to biological resources if it would  
22 result in any of the effects listed below. These effects are based on common NEPA standards,  
23 CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice.

1 **NEPA**

2 The following criteria were used to determine the severity and intensity of impacts under NEPA:

- 3 1. The degree to which the action may adversely affect an endangered or threatened species  
4 or its habitat that has been determined to be critical under the Endangered Species Act of  
5 1973.
- 6 2. The degree to which the Proposed Action and alternatives affects local and regional  
7 populations of non-sensitive biological resources, and special-status species and habitats.  
8 While a smaller adverse effect to a special-status species (or any adverse effect to a listed  
9 species) may be considered significant, these effects would need to be very large to have  
10 adverse effects on regional non-sensitive resources.
- 11 3. Whether an action significantly affects unique characteristics of the geographic area such  
12 as proximity to critical habitats, special-status habitats, or other ecologically critical areas.
- 13 4. Whether the action is related to other actions with individually insignificant but  
14 cumulatively significant impacts. Significance exists if it is reasonable to anticipate a  
15 cumulatively significant impact on the environment. Significance cannot be avoided by  
16 terming an action temporary or by breaking it down into small component parts.
- 17 5. Whether the action threatens a violation of federal, state, or local law or requirements  
18 imposed for the protection of the environment.

19 **CEQA/Thresholds of Significance**

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

23 A project would have a significant adverse effect on biological resources if it would:

- 24 1. Have a substantial adverse impact, either directly or through habitat modifications, on any  
25 species identified as a candidate, sensitive, or special-status species in local or regional  
26 plans, policies, or regulations, or by the California Department of Fish and Wildlife or the  
27 U.S. Fish and Wildlife Service.
- 28 2. Have a substantial adverse impact on any riparian habitat or other sensitive natural  
29 community identified in local or regional plans, policies, and regulations or by the  
30 California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.
- 31 3. Have a substantial adverse impact on federally protected wetlands as defined by Section  
32 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.)  
33 through direct removal, filling, hydrological interruption, or other means.
- 34 4. Interfere substantially with the movement of any native resident or migratory fish or  
35 wildlife species, or with established native resident or migratory wildlife corridors, or  
36 impede the use of native wildlife nursery sites.
- 37 5. Conflict with any local policies or ordinances protecting biological resources, such as a  
38 tree preservation policy or ordinance.
- 39 6. Conflict with the provisions of an adopted habitat conservation plan, natural Community  
40 conservation plan, or other approved local, regional, or state habitat conservation plan.

## 3.5.3 Impacts and Mitigation Measures

### 3.5.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

This discussion of Alternative A is specific to the construction, operation and maintenance, and decommissioning of the solar arrays and related components that would be constructed within the EUL Study Area as well as the gen-tie line options associated with Alternative A. Mitigation measures identified here are presented in Section 3.5.5, *Mitigation Measures*.

#### **NEPA: Environmental Impacts**

##### **Construction**

###### General Vegetation and Wildlife

The applicant plans to implement the "mow and roll" technique of site preparation, which allows for a significant reduction in the extent of rough grading and related dust control needs. Instead of conducting vegetation clearing and mass grading across the whole site, limited grading necessary to establish construction staging areas; site access roads; inverter pads; utility trenches; building pads for onsite substation, switchyards and the operation and maintenance (O&M) building; and discreet areas where leveling may be needed for pile installation would be conducted. In order to access locations for vibratory piles placed for solar racking, vegetation would be mowed, leaving root wads intact and rolled over only to the extent necessary for construction equipment to access the construction site area.

Construction of the solar array within the EUL Study Area would require the potential disturbance of up to 4,000 acres as described above. Similar construction practices would be employed along the gen-tie line with a potential disturbance area of 150 acres (acreage based on assumed 14.3 to 15.9-mile length and 100 ft width for gen-tie right of way). This would result in the direct impact of disturbance of a maximum of 4,150 acres of general (non-sensitive) vegetation and wildlife resources. Those species that have smaller home ranges or are less mobile are more likely to experience direct impacts. However, because an abundance of similar and less disturbed habitats are present in the larger regional setting, significant impacts are not expected. No mitigation is required.

Construction of Alternative A also has the potential for indirect impacts to general vegetation and wildlife resources, including impacts from the introduction or increasing of the presence of non-native plant species (including weeds), and from the introduction or increasing of the presence of predators such as common ravens, domestic dogs, and coyotes. This is a particular issue if blowing dust creates habitat for the introduction of Russian thistle and other non-native species, and particularly within those areas of the EUL Study Area that have burned in the past decade. These impacts would be considered significant if these introductions or increases were so great as to alter the native composition of the local or regional setting areas. Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for the solar facility portion of the project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for the gen-tie portion of the project, would reduce these impacts to a less-than-significant level.

Construction noise, dust, and lighting may also indirectly impact general wildlife species. However, these impacts are likely to be less than significant for general wildlife species as they are not likely

1 to affect very large numbers of individuals or alter the local or regional species composition. No  
 2 mitigation is required.

3 **Special-Status Plants**

4 Construction of Alternative A has the potential to directly impact special-status plant species  
 5 through the removal of these plants during site preparation and other construction activities. If  
 6 endangered or other special-status plants are present within the area covered by the Proposed  
 7 Action and would be removed, these impacts would be considered significant. As described  
 8 previously, implementation of Mitigation Measures MM 3.5-1a and MM 3.5-1b (Biological  
 9 Monitoring), MM 3.5-3a and MM 3.5-2b (Worker Environmental Awareness Program), MM 3.5-  
 10 4a (Vegetation Salvage and Management Plan), and MM 3.5-5a (Weed Management), would  
 11 reduce these impacts to a less-than-significant level.

12 Construction of Alternative A has the potential for removal of alkali mariposa lily and Mojave  
 13 spineflower, known to occur in the EUL Study Area, as shown in **Table 3.5-10**, and other special-  
 14 status plants with a moderate or high potential to occur (i.e., desert cymopterus, recurved larkspur,  
 15 Barstow woolly sunflower, and sagebrush loeflingia).

16 Potential disturbance to Mojave spineflower, a CRPR List 4.2 species, and its suitable habitat is  
 17 considered less than significant. CRPR List 4 species are of limited distribution or infrequent  
 18 throughout a broader area in California, but their vulnerability or susceptibility to threat is currently  
 19 low. From a statewide perspective, this species is not considered rare (CDFW, 2018b). It is  
 20 considered locally common off base (EAFB, 2008) and on base, in 2015, it was abundant between  
 21 the western edge of Rosamond Dry Lake and the installation boundary (EAFB, 2017). Based on  
 22 the CNPS Inventory of Rare and Endangered Plants, Mojave spineflower is widespread throughout  
 23 the Antelope Valley (CNPS, 2018). Given Mojave spineflower is not rare from a statewide  
 24 perspective nor is it locally rare, direct impacts are considered less than significant.

25 The removal of individual alkali mariposa lilies and suitable habitat for the species as well as direct  
 26 impacts to other special-status species with a moderate or high potential to occur (i.e., desert  
 27 cymopterus, recurved larkspur, Barstow woolly sunflower, and sagebrush loeflingia), would be  
 28 considered significant.

29 **TABLE 3.5-10**  
 30 **ACREAGES OF KNOWN AND POTENTIAL HABITAT FOR ALKALI MARIPOSA LILY IN**  
 31 **ALTERNATIVE A AND ALTERNATIVE B**

Species/Habitat Type	Alternative A	Alternative B
<b>Alkali mariposa lily</b>		
Known habitat	3	0
Suitable habitat	129	36

32 Construction of Alternative A also has the potential to indirectly impact special-status plant species,  
 33 including alkali mariposa lily and Mojave spineflower, by degrading habitats on and adjacent to  
 34 Alternative A and by introducing or increasing the presence of non-native plant species (including  
 35 weeds). As described above, because Mojave spineflower is not rare from a statewide perspective

1 nor is it locally rare, indirect impacts are considered less than significant. Impacts to special-status  
2 plants would be considered significant if the increase in weeds was so great as to drastically alter  
3 the native composition of the local or regional setting areas. Implementation of Mitigation  
4 Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for the solar facility portion of the  
5 project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for the gen-tie portion of the project,  
6 would reduce these impacts to a less-than-significant level.

#### 7 Special-Status Wildlife

8 Construction of Alternative A has the potential to directly impact special-status wildlife species,  
9 such as the federally and state-threatened desert tortoise and the state-threatened Swainson's hawk  
10 (during migration and dispersal). Direct impacts could occur from mortality or injury to these  
11 species during construction activities (i.e., vehicle collisions, bird collisions with project  
12 infrastructure). If they occur, these impacts would be considered significant. Implementation of  
13 Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-6a, MM 3.6-7a, MM 3.6-8a, MM 3.5-9a,  
14 MM 3.5-11a, and MM 3.5-12a for the solar facility portion of the project, and Mitigation Measures  
15 3.5-1b, MM 3.5-2b, MM 3.5-5b, MM 3.5-6b, MM 3.5-7b, MM 3.5-8b, MM 3.5-9b, MM 3.5-10b,  
16 and MM 3.5-11b for the gen-tie portion of the project, would reduce these impacts to a less-than-  
17 significant level. In particular, it is noted that MM 3.5-8a and MM 3.5-8b require that any desert  
18 tortoise within the project footprint shall be relocated by an authorized biologist and that fencing  
19 shall be erected to prevent desert tortoises from entering the site during construction in accordance  
20 with its Biological Opinion and prior to commencement of construction.

21 Construction of Alternative A also has the potential to indirectly impact special-status wildlife,  
22 including those from the introduction or increasing of the presence of non-native plant species  
23 (including weeds), and from the introduction or increasing of the presence of predators such as  
24 common ravens, domestic dogs, and coyotes. These impacts would be considered significant.  
25 Implementation of MM 3.4-5a (Weed Management) and MM 3.5-6a for the solar facility portion  
26 of the project as well as Mitigation Measure 3.5-5b (Raven Management Plan) for the gen-tie  
27 portion of the project, would reduce these impacts to a less-than-significant level.

28 Construction noise, dust and lighting may also indirectly impact special-status wildlife species.  
29 These impacts would be considered significant for special-status wildlife species even though they  
30 are not likely to affect very large numbers of individuals as these species have special protections,  
31 particularly the listed species. Implementation of Mitigation Measures MM 3.5-1a and MM 3.5-2a  
32 for the solar facility portion of the project and Mitigation Measures MM 3.5-1b and MM 3.5-3b for  
33 the gen-tie portion of the project, would reduce these impacts to a less-than-significant level.

#### 34 Sensitive Habitats

35 Construction of Alternative A may result in direct impacts to sensitive habitats by the potential  
36 filling and/or removal of waters that fall under the jurisdiction of the state Streambed Alteration  
37 program (Fish and Game Code 1602), or RWQCB. However, it is anticipated that such resources  
38 can be avoided. A jurisdictional delineation has been conducted on 3,032 acres of the 4,000-acre  
39 Alternative A (Dudek, 2018b) and a map-based analysis was conducted for potential for waters of  
40 the state to occur in the remainder of the EUL Study Area. In the 3,032-acre portion of the EUL  
41 Study Area where a formal jurisdictional delineation was completed, there are approximately 9.4

1 acres of ephemeral, non-vegetated swales under the jurisdiction of CDFW and RWQCB.  
2 Additionally, in the area where the map-based analysis was performed, a pre-project jurisdictional  
3 delineation would determine the precise location and extent of any additional jurisdictional  
4 resources, and where they can be avoided or impacts reduced. If relevant, impacts to jurisdictional  
5 resources that cannot be avoided would be considered adverse but minimal (less than 1 acre). As  
6 discussed in Section 3.5.1.2, an approved jurisdictional determination was issued by USACE for  
7 the Sunlight Partners Solar Array Project on June 7, 2013 (USACE, 2013). USACE determined  
8 that potentially jurisdictional waters and/or wetlands were assessed within the review area and  
9 determined to be not USACE-jurisdictional. The review area included the Antelope Valley  
10 Watershed. This review area encompasses the proposed solar facility site and gen-tie line options.  
11 Therefore, the proposed solar facility site and gen-tie line options are located in an area determined  
12 to not be under the jurisdiction of USACE and would, therefore, not require a Section 404 permit.  
13 However, the project may result in the filling and/or removal of waters jurisdictional to the State  
14 Streambed Alternation program or RWQCB. These impacts would be significant without  
15 mitigation. Implementation of Mitigation Measures MM 3.5-1a and 3.5-3a for the solar facility  
16 portion of the project and Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM 3.5-13b for the  
17 gen-tie portion of the project, would reduce these impacts to a less-than-significant level.

18 Construction of Alternative A, including the gen-tie, would result in the removal of Joshua tree  
19 woodlands. This impact may be significant because regional plans that are applicable to the gen-  
20 tie line area contain policies that protect Joshua Trees. Joshua tree woodlands are considered a  
21 sensitive natural community. However, within the entire range of the community, it is considered  
22 uncommon but not rare (global rank of G4). Joshua tree woodlands are also relatively abundant on  
23 Edwards AFB (47,382 acres). Because Joshua tree woodlands are considered sensitive natural  
24 communities by Kern County, for the purposes of the draft EIS/EIR, impacts to Joshua tree  
25 woodland are considered significant.

26 Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-13a for  
27 the solar facility portion of the project as well as Mitigation Measures MM 3.5-1b, MM 3.5-2b,  
28 MM 3.5-14b, and MM 3.5-15b for the gen-tie portion of the project, would reduce these impacts  
29 to a less-than-significant level.

### 30 Wildlife Movement Corridors

31 Potential direct and indirect impacts to wildlife movement corridors are not likely to be significant  
32 because there are no major wildlife corridors within the region. Although wildlife movement and  
33 dispersal likely occurs on a regional and local scale, abundant adjacent lands would remain  
34 available for wildlife movement. Potential direct and indirect impacts to wildlife movement  
35 corridors from construction of the gen-tie are not likely to be significant because although these  
36 resources may be present within the gen-tie area, the construction of the gen-tie line would not  
37 restrict wildlife movement and abundant adjacent lands would remain available for wildlife  
38 movement. No mitigation is required.

1 **Operations and Maintenance**

2 **General Vegetation and Wildlife**

3 Once the project is constructed, no significant additional direct loss or disturbance of vegetation  
4 would occur. As a result, the operation and maintenance of Alternative A is unlikely to directly  
5 affect general vegetation resources but could directly impact general wildlife through injury and  
6 mortality related to collisions with vehicles and project infrastructure. With the special exception  
7 of birds (discussed separately below) these impacts are not considered significant as an abundance  
8 of similar resources are present in the larger regional setting. No mitigation is required.

9 The operation and maintenance of Alternative A has the potential to indirectly impact general  
10 vegetation and wildlife resources, including those from the introduction or increasing of the  
11 presence of non-native plant species (including weeds), and from the introduction or increasing of  
12 the presence of predators such as common ravens, domestic dogs, and coyotes. These impacts  
13 would be considered significant if these introductions or increases were so great as to alter the  
14 native composition of the local and regional setting areas. Implementation Mitigation Measures  
15 MM 3.5-3a, MM 3.5-4a, and MM 3.5-6a for the solar facility portion of the project, and Mitigation  
16 Measures MM 3.5-2b and MM 3.5-5b for the gen-tie portion of the project, would reduce these  
17 impacts to a less-than-significant level.

18 Of particular concern is the potential for indirect impacts to birds from the possibility that they may  
19 perceive the solar arrays as water bodies, particularly during migration periods for water birds.  
20 Impacts would result either from mortality or injury caused by colliding with panels or other  
21 infrastructure, or by birds landing on the site unharmed, but unable to regain flight, eventually  
22 perishing from predation or dehydration. If large numbers of birds were affected, these impacts  
23 would be considered significant. Implementation of Mitigation Measures MM 3.5-7a and MM 3.5-  
24 9a for the solar facility portion of the project, and Mitigation Measures MM 3.5-6b and MM 3.5-  
25 7b for the gen-tie portion of the project, would reduce these impacts to a less-than-significant level.  
26 MM 3.5-7a includes preparation and agency approval of a *Bird Conservation Strategy* (BCS) in  
27 which project-specific monitoring, project controls in the event that certain thresholds are met, and  
28 other requirements would be identified to address and reduce potential avian mortality. MM. 3.5-  
29 6b includes utilizing the standards set forth in the *Suggested Practices for Avian Protection on*  
30 *Power Lines: The State of the Art in 2006* on generation tie-lines to protect birds from electrocution  
31 and collision.

32 **Special-Status Plants**

33 The operation and maintenance of Alternative A is unlikely to substantially directly affect special-  
34 status plants. There remains potential to indirectly impact special-status plant species in adjacent  
35 areas by introducing or increasing the presence of non-native plant species (including weeds).  
36 These impacts would be considered significant if the increase in weeds was so great as to drastically  
37 alter the native composition of these areas. Implementation of Mitigation Measures MM 3.5-1a,  
38 3.5-3a, and 3.5-4a for the solar facility portion of the project, and Mitigation Measures MM 3.5-1b  
39 and MM 3.5-2b for the gen-tie portion of the project, would reduce these impacts to a less-than-  
40 significant level.

1 **Special-Status Wildlife**

2 The operation and maintenance of Alternative A has the potential to directly impact special-status  
3 wildlife species through mortality or injury to these species related to collisions with vehicles and  
4 other project infrastructure. These impacts would be considered significant, especially impacts to  
5 listed species. Implementation of Mitigation Measures MM 3.5-5a, MM 3.5-7a, MM 3.5-8a, and  
6 MM 3.5-9a for the solar facility portion of the site, and Mitigation Measures MM 3.5-6b, MM 3.5-  
7 7b, and MM 3.5-8b for the gen-tie portion of the project, would reduce these impacts to a less-than-  
8 significant level.

9 The operation and maintenance of Alternative A also has the potential to indirectly impact special-  
10 status wildlife from introduction or increase of the presence of non-native plant species (including  
11 weeds), and from the introduction or increase of the presence of predators such as common ravens,  
12 domestic dogs, and coyotes, including through the introduction of trash that could attract them to  
13 the site. These impacts would be considered significant. Implementation of Mitigation Measures  
14 MM 3.5-3a, MM 3.5-5a, MM 3.5-6a, and MM 3.5-8a for the solar facility portion of the project  
15 and Mitigation Measures MM 3.5-2b, MM 3.5-5b, and MM 3.5-8b for the gen-tie portion of the  
16 project, would reduce these impacts to a less-than-significant level.

17 **Sensitive Habitats**

18 The operation and maintenance of Alternative A and the gen-tie line is unlikely to result in  
19 significant direct or indirect impacts to sensitive habitats. No mitigation is required.

20 **Decommissioning**

21 **General Vegetation and Wildlife**

22 At the time the facility is decommissioned in approximately 35 years, the EUL site could be  
23 converted to other uses or it could be revegetated to a natural state. New direct impacts would occur  
24 if the vegetation on the site has reestablished itself in the disturbed areas. Impacts from any changes  
25 to the project site would be purely speculative and will be addressed at that time through the  
26 completion of additional NEPA and CEQA analysis or in accordance with applicable regulations  
27 in effect at that time.

28 However, and in general, the decommissioning of Alternative A may remove vegetation and  
29 wildlife resources within the gen-tie line route right-of-way that may reestablish after the  
30 anticipated 35-year period of operation. This impact is not likely to be considered significant as an  
31 abundance of similar and less-disturbed habitats would likely remain present in the larger regional  
32 setting.

33 The decommissioning of Alternative A also has the potential to indirectly impact general vegetation  
34 and wildlife resources, from the introduction or increase of the presence of non-native plant species  
35 (including weeds), and from the introduction or increase of the presence of predators such as  
36 common ravens, domestic dogs, and coyotes. These impacts would be considered significant if  
37 these introductions or increases were so great as to alter the native composition of the local or  
38 regional setting areas. Implementation of Mitigation Measures MM 3.5-5a and MM 3.5-6a for the  
39 solar facility portion of the project, and Mitigation Measure MM 3.5-5b for the gen-tie portion of  
40 the project, would reduce these impacts to a less-than-significant level.

1 The decommissioning noise, dust, and lighting may also indirectly impact general wildlife species.  
2 These impacts are likely to be less than significant for general wildlife species as they are not likely  
3 to affect very large numbers of individuals or alter the local or regional species composition.

#### 4 **Special-Status Plants**

5 If the site is converted to other uses following the decommissioning of Alternative A, special-status  
6 plants may be directly or indirectly affected if they had re-established on the site, through direct  
7 removal of these species, or indirect impacts related to introducing or increasing the presence of  
8 non-native plant species (including weeds). These impacts would be considered significant if listed  
9 species were affected or if the increase in weeds was so great as to drastically alter the native  
10 composition of the local or regional setting areas. Mitigation measures related to these impacts  
11 include Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for the solar  
12 facility portion of the project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for the gen-tie  
13 portion of the project. Implementation of these measures would reduce impacts to a less-than-  
14 significant level.

#### 15 **Special-Status Wildlife**

16 The decommissioning of Alternative A has the potential to directly impact special-status wildlife  
17 species through mortality or injury to these species related to collisions with vehicles and other  
18 project infrastructure. These impacts would be considered significant, especially those to listed  
19 species. Mitigation measures related to these impacts include Mitigation Measures MM 3.5-1a,  
20 MM 3.5-3a, MM 3.5-6a, and MM 3.5-8a for the solar facility portion of the project, and Mitigation  
21 Measures MM 3.5-1b, MM 3.5-2b, MM 3.5-5b, and MM 3.5-8b for the gen-tie portion of the  
22 project and would reduce these impacts to a less-than-significant level.

23 The decommissioning of Alternative A also has the potential to indirectly impact special-status  
24 wildlife, including those from the introduction or increase of the presence of non-native plant  
25 species (including weeds), and from the introduction or increase of the presence of predators such  
26 as common ravens, domestic dogs, and coyotes. These impacts would be considered adverse.  
27 Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-5a, and MM 3.5-6a, for  
28 the solar facility portion of the project, and Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM  
29 3.5-5b for the gen-tie portion of the project, would reduce these impacts to a less-than-significant  
30 level.

#### 31 **Sensitive Habitats**

32 The decommissioning of Alternative A may result in direct impacts to sensitive habitats by the  
33 filling and/or removal of waters that fall under the jurisdiction of the state Streambed Alteration  
34 program (Fish and Game Code 1602), or RWQCB. If impacts to waters of the state cannot be  
35 avoided, the remaining impacts to jurisdictional resources would be considered significant. These  
36 impacts would be significant without mitigation. Implementation of Mitigation Measure MM 3.5-  
37 13b (Jurisdictional Waters Permitting) for the gen-tie portion of the project, would reduce these  
38 impacts to a less-than-significant level.

39 The decommissioning of Alternative A is unlikely to result in direct or indirect impacts to Joshua  
40 tree woodlands. Although some Joshua trees may reestablish on the site, they are unlikely to have

1 formed a Joshua tree woodland within the 35-year life of the project. Potential beneficial impacts  
2 to wildlife movement would result from the removal of the solar arrays.

### 3 **CEQA: Impact Significance Determination**

4 **Impact 3.5-1: The project would have a substantial adverse impact, either directly or through**  
5 **habitat modifications, on species identified as a candidate, sensitive, or special-status species**  
6 **in local or regional plans, policies, or regulations, or by the California Department of Fish**  
7 **and Wildlife or the U.S. Fish and Wildlife Service.**

8 As discussed in this section of the EIS/EIR under NEPA: Environmental Impacts, the development  
9 of Alternative A would result in both direct and indirect impacts to listed and other special-status  
10 species in the absence of avoidance, minimization, and mitigation measures. Many of these impacts  
11 would be significant prior to mitigation. The removal of Mojave spineflower, a CRPR List 4.2  
12 species, and its suitable habitat, is considered less than significant. CRPR List 4 species are of  
13 limited distribution or infrequent throughout a broader area in California, but their vulnerability or  
14 susceptibility to threat is currently low. From a statewide perspective, this species is not considered  
15 rare (CDFW, 2018b). It is considered locally common off base (EAFB, 2008) and on base, in 2015,  
16 it was abundant between the western edge of Rosamond Dry Lake and the installation boundary  
17 (EAFB, 2017). Based on the CNPS Inventory of Rare and Endangered Plants, Mojave spineflower  
18 is widespread throughout the Antelope Valley (CNPS, 2018). Given Mojave spineflower is not rare  
19 from a statewide perspective nor is it locally rare, impacts are considered less than significant.

### 20 **Mitigation Measures**

21 Implement Mitigation Measures MM 3.5-1a through MM 3.5-12a for the solar facility portion of  
22 the project and Mitigation Measures MM 3.5-1b through MM 3.5-12b for the gen-tie portion of the  
23 project. (see Section 3.5.5).

### 24 **Level of Significance after Mitigation**

25 Impacts would be less than significant.

26 **Impact 3.5-2: The project would have a substantial adverse impact on any riparian habitat**  
27 **or other sensitive natural community identified in local or regional plans, policies, and**  
28 **regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife**  
29 **Service.**

30 There is no riparian habitat located within the Alternative A site. Sensitive habitats present include  
31 Joshua tree woodlands and wildlife movement corridors, both of which may be directly and  
32 indirectly affected by the Proposed Action. Potential direct and indirect impacts to wildlife  
33 movement corridors are not considered to be significant. Because Joshua tree woodlands are  
34 considered sensitive natural communities, for the purposes of the draft EIS/EIR, impacts to Joshua  
35 tree woodland are considered significant.

### 36 **Mitigation Measures**

37 Implement Mitigation Measures MM 3.5-1a, MM 3.5-3a, 3.5-4a, and 3.5-13a for the solar facility  
38 portion of the project, and Mitigation Measures MM 3.5-1b, MM 3.5-2b, MM 3.5-14b, and MM  
39 3.5-15b for the gen-tie portion of the project (see Section 3.5.5).

1 **Level of Significance after Mitigation**

2 Impacts would be less than significant.

3 **Impact 3.5-3: The project would have a substantial adverse impact on federally protected**  
4 **wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to,**  
5 **marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or**  
6 **other means.**

7 Within the proposed solar facility and gen-tie line, there are no waters of the U.S., including  
8 wetlands, defined by Section 404 of the Clean Water Act. The proposed solar facility site and gen-  
9 tie line are located in an area that supports resources that are under the jurisdiction of the state  
10 Streambed Alteration program (Fish and Game Code 1602) and RWQCB. A jurisdictional  
11 delineation has been conducted on 3,032 acres of the 4,000-acre Alternative A (Dudek, 2018b). In  
12 the remainder of the 4,000 acres, a map-based analysis was conducted to identify the potential  
13 locations of waters of the state. In areas not previously surveyed, a pre-project jurisdictional  
14 delineation will be conducted to determine the precise location and extent of any jurisdictional  
15 resources, and where they can be avoided or impacts reduced. Remaining impacts to jurisdictional  
16 resources, if avoidance is not feasible, would be considered minimal (less than 1 acre) but  
17 nonetheless significant; however, Mitigation Measure MM 3.5-13b requires compensatory  
18 mitigation for any impacts to jurisdictional resources for the gen-tie portion of the project, if  
19 avoidance is not feasible.

20 **Mitigation Measures**

21 Implement Mitigation Measures MM 3.5-1a and MM 3.5-3a for the solar facility portion of the  
22 project, and Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM 3.5-13b for the gen-tie portion  
23 of the project (see Section 3.5.5).

24 **Level of Significance after Mitigation**

25 Impacts would be less than significant.

26 **Impact 3.5-4: The project would interfere substantially with the movement of any native**  
27 **resident or migratory fish or wildlife species or with established native resident or migratory**  
28 **wildlife corridors, or impede the use of native wildlife nursery sites.**

29 As discussed above under the Sensitive Habitats discussion, there are not likely to be substantial  
30 changes to regional movement patterns of wildlife. The implementation of Alternative A is also not  
31 likely to impede the use of any native wildlife nursery sites. Impacts would be less than significant  
32 and no mitigation is required.

33 **Mitigation Measures**

34 No mitigation measures are required.

35 **Level of Significance after Mitigation**

36 Impacts would be less than significant.

1 **Impact 3.5-5: The project would conflict with any local policies or ordinances protecting**  
2 **biological resources, such as a tree preservation policy or ordinance.**

3 With respect to the Gen-Tie line and without mitigation, the implementation of Alternative A could  
4 conflict with the general guidance of the Kern County General Plan to encourage development  
5 within urbanized areas, encourage the preservation of Joshua trees and wildflower concentrations,  
6 and discourage the development and fragmentation of resource management areas. The following  
7 are specific measures of local policies and ordinances from the energy element of the General Plan,  
8 and local Specific Plans:

- 9 • The County should work closely with local, State, and federal agencies to ensure that  
10 energy projects (both discretionary and ministerial) avoid or minimize direct impacts to  
11 fish, wildlife, and botanical resources, wherever practical.
- 12 • The County should develop and implement measures which result in long-term  
13 compensation for wildlife habitat, which is unavoidably damaged by energy exploration  
14 and development activities.
- 15 • The County should encourage solar development in the desert and valley regions  
16 previously disturbed, and discourage development of energy projects on undisturbed land  
17 supporting State or federally protected plant and wildlife species.
- 18 • South of Mojave – Elephant Butte Specific Plan (1973) – this plan directs that the removal  
19 of native desert vegetation should be limited, and that stands of Joshua trees should be  
20 preserved, and that utilities along roadways should be placed underground to protect scenic  
21 values.

22 The project is not likely to impact Joshua trees, but if there is an impact it would be considered  
23 significant. However, with the implementation of the mitigation measures listed below, impacts to  
24 Joshua Tress would be reduced to a less than significant level.

25 **Mitigation Measures**

26 Implement Mitigation Measures MM 3.5-4a and MM 3.5-13a for the solar facility portion of the  
27 project, and Mitigation Measures MM 3.5-14b and MM 3.5-15b for the gen-tie portion of the  
28 project (see Section 3.5.5).

29 **Level of Significance after Mitigation**

30 Impacts would be less than significant.

31 **Impact 3.5-6: The project would conflict with the provisions of an adopted Habitat**  
32 **Conservation Plan, Natural Community Conservation Plan, or other approved local,**  
33 **regional, or state habitat conservation plan.**

34 The project would not conflict with the provisions of an adopted habitat conservation plan, natural  
35 community conservation plan, or other approved local, regional, or state habitat conservation plan  
36 and would therefore have no impact.

1 **Mitigation Measures**

2 No mitigation measures are required.

3 **Level of Significance after Mitigation**

4 No impact.

5 **3.5.3.2 Alternative B: 1,500-Acre EUL**

6 ***NEPA: Environmental Impacts***

7 Alternative B would involve construction of solar arrays on approximately one-third of the acreage  
8 in the EUL Study Area and construction-related ground disturbance that Alternative A would  
9 require to support the full project (reduced from approximately 4,000 to 1,500 acres). Alternative  
10 B would utilize the same gen-tie line options route described for Alternative A.

11 **Construction**

12 **General Vegetation and Wildlife**

13 The applicant plans to implement the "mow and roll" technique of site preparation, which allows  
14 for a significant reduction in the extent of rough grading and related dust control needs. Instead of  
15 conducting vegetation clearing and mass grading across the whole site, limited grading necessary  
16 to establish construction staging areas; site access roads; inverter pads; utility trenches; building  
17 pads for onsite substation, switchyards and the O&M building; and discreet areas where leveling  
18 may be needed for pile installation would be conducted. In order to access locations for vibratory  
19 piles placed for solar racking, vegetation would be mowed, leaving root wads intact and rolled over  
20 only to the extent necessary for construction equipment to access the construction site area.

21 Construction of the solar array within the EUL Study Area would require the potential disturbance  
22 of up to 1,500 acres as described above. Similar construction practices would be employed along  
23 the gen-tie line with a potential disturbance area of 150 acres (acreage based on assumed 14.3 to  
24 15.9-mile length and 100 ft width for gen-tie right of way). This would result in the direct impact  
25 of disturbance of a maximum of 1,650 acres of general (non-sensitive) vegetation and wildlife  
26 resources. Those species that have smaller home ranges or are less mobile are more likely to  
27 experience direct impacts. However, because an abundance of similar and less disturbed habitats  
28 are present in the larger regional setting, significant impacts are not expected. No mitigation is  
29 required. Construction of Alternative B also has the potential for indirect impacts to general  
30 vegetation and wildlife resources, including impacts from the introduction or increasing of the  
31 presence of non-native plant species (including weeds), and from the introduction or increasing of  
32 the presence of predators such as common ravens, domestic dogs, and coyotes. These impacts  
33 would likely occur at a lesser extent than identified for Alternative A due to the smaller footprint  
34 of Alternative B, but would be considered significant if these introductions or increases were so  
35 great as to alter the native composition of the local or regional setting areas. Implementation of  
36 Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, MM 3.5-5a, and MM 3.5-6a for the  
37 solar facility portion of the project, and Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM  
38 3.5-5b for the gen-tie portion of the project, would reduce these impacts to a less-than-significant  
39 level.

1 Construction noise, dust, and lighting may also indirectly impact general wildlife species. These  
2 impacts are likely to be less than significant for general wildlife species as they are not likely to  
3 affect very large numbers of individuals or alter the local or regional species composition. No  
4 mitigation is required. However, implementation of Mitigation Measure MM 3.5-2a for the solar  
5 facility portion of the project, and Mitigation Measure MM 3.5-3b for the gen-tie portion of the  
6 project, would further reduce impacts from noise, dust and lighting.

#### 7 Special-Status Plants

8 Construction of Alternative B has the potential to directly impact special-status plant species,  
9 through the removal of these plants during site preparation and other construction activities. If  
10 special-status plant species are present within the 1,650 acres covered by Alternative B and would  
11 be removed, these impacts would be considered significant. Implementation of Mitigation  
12 Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for the solar facility portion of the  
13 project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for the gen-tie portion of the project,  
14 would reduce these impacts to a less-than-significant level.

15 Construction of Alternative B reduces the potential for removal of alkali mariposa lily and Mojave  
16 spineflower, as compared to Alternative A, but may still result in potential impacts to these species  
17 and other special-status plants with a moderate or high potential to occur (i.e., desert cymopterus,  
18 recurved larkspur, Barstow woolly sunflower, and sagebrush loeflingia).

19 The removal of Mojave spineflower, a CRPR List 4.2 species, and its suitable habitat under  
20 Alternative B is considered less than significant. CRPR List 4 species are of limited distribution or  
21 infrequent throughout a broader area in California, but their vulnerability or susceptibility to threat  
22 is currently low. From a statewide perspective, this species is not considered rare (CDFW, 2018b).  
23 It is considered locally common off base (EAFB, 2008) and on base, in 2015, it was abundant  
24 between the western edge of Rosamond Dry Lake and the installation boundary (EAFB, 2017).  
25 Based on the CNPS Inventory of Rare and Endangered Plants, Mojave spineflower is widespread  
26 through the Antelope Valley (CNPS, 2018). Given Mojave spineflower is not rare from a statewide  
27 perspective nor is it locally rare, direct impacts are considered less than significant.

28 The removal of individual alkali mariposa lilies and suitable habitat for the species as well as direct  
29 impacts to other special-status species with a moderate or high potential to occur (i.e., desert  
30 cymopterus, recurved larkspur, Barstow woolly sunflower, and sagebrush loeflingia), would be  
31 considered significant.

32 Construction of Alternative B also has the potential to indirectly impact special-status plant species,  
33 including alkali mariposa lily and Mojave spineflower by degrading habitats on and adjacent to  
34 Alternative B and by introducing or increasing the presence of non-native plant species (including  
35 weeds). As described above, because Mojave spineflower is not rare from a statewide perspective  
36 nor is it locally rare, indirect impacts are considered less than significant. Impacts to special-status  
37 plants would be considered significant if the increase in weeds was so great as to drastically alter  
38 the native composition of the local or regional setting areas. Implementation of Mitigation  
39 Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for the solar facility portion of the

1 project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for the gen-tie portion of the project,  
2 would reduce these impacts to a less-than-significant level.

### 3 Special-Status Wildlife

4 Construction of Alternative B has the potential to directly impact special-status wildlife species,  
5 such as the federally and state threatened desert tortoise and the state-threatened Swainson's hawk  
6 (during migration and dispersal). Direct impacts would occur from mortality or injury to these  
7 species during construction activities (i.e., vehicle collisions, bird collisions with project  
8 infrastructure). If they occur, these impacts would be considered significant, especially those to  
9 listed species.

10 Alternative B is likely to result in many fewer direct impacts to desert tortoise based on the  
11 combination of incidental data from recent surveys, and low densities found in the Alternative B  
12 area in past surveys. Based on the habitat assessment, the potential to impact Mohave ground  
13 squirrel is low (Brylski, 2018a). Direct impacts to Swainson's hawk are likely to be reduced  
14 proportionally to the reduction in the project size.

15 Implementation of Mitigation Measures MM 3.5-1a through MM 3.5-12a for the solar facility  
16 portion of the project and Mitigation Measures MM 3.5-1b through MM 3.5-11b for the gen-tie  
17 portion of the project, would reduce these impacts to a less-than-significant level.

18 Construction of Alternative B also has the potential to indirectly impact special-status wildlife as  
19 discussed for Alternative A, but to a lesser degree and likely proportionally reduced with the  
20 reduction in project size. Implementation of mitigation measures as discussed for Alternative A  
21 would reduce these impacts to a less-than-significant level.

### 22 Sensitive Habitats

23 Construction of Alternative B would likely result in proportionally reduced direct impacts (as  
24 compared to Alternative A) to sensitive habitats by the potential filling and/or removal of waters  
25 that may fall under the jurisdiction of the state Streambed Alteration program (Fish and Game Code  
26 1602), or RWQCB. If avoidance were not feasible, impacts to jurisdictional resources would be  
27 considered significant. These impacts would be significant without mitigation. Implementation of  
28 Mitigation Measures MM 3.5-1a and MM 3.5-3a for the solar facility portion of the project, and  
29 Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM 3.5-13b for the gen-tie portion of the  
30 project, would reduce these impacts to a less-than-significant level.

31 Construction of Alternative B, including the gen-tie, would result in direct impacts to sensitive  
32 habitats by removal of Joshua tree woodlands. Because Joshua tree woodlands are considered  
33 sensitive natural communities, for the purposes of the draft EIS/EIR, impacts to Joshua tree  
34 woodland are considered significant. Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-  
35 3a, MM 3.5-4a, and 3.5-13a for the solar facility portion of the project and Mitigation Measures  
36 MM 3.5-1b, MM 3.5-2b, MM 3.5-14b, and MM 3.5-15b for the gen-tie portion of the site, would  
37 reduce these impacts to a less-than-significant level.

1 **Wildlife Movement Corridors**

2 Potential direct and indirect impacts to wildlife movement corridors are not likely to be significant  
3 because although these resources may be present at the EUL, abundant adjacent lands would remain  
4 available for wildlife movement. Potential direct and indirect impacts to wildlife movement  
5 corridors from the construction of the gen-tie are not likely to be significant because although these  
6 resources may be present within the gen-tie area, the construction of the gen-tie line would not  
7 restrict wildlife movement and abundant adjacent lands would remain available for wildlife  
8 movement. No mitigation is required.

9 **Operation and Maintenance**

10 Alternative B would result in similar biological resources impacts as described for Alternative A.  
11 However, because of the reduced size of this alternative, the geographic area within Alternative B  
12 would be smaller than that of Alternative A, which would reduce the area within which biological  
13 resources impacts would occur. Consequently, biological resources-related impacts associated with  
14 operation and maintenance of Alternative B would be reduced relative to Alternative A. Mitigations  
15 described for Alternative A would be the same as required for Alternative B.

16 **Decommissioning**

17 Alternative B would cause similar decommissioning-related biological resources impacts as  
18 described for Alternative A; however, Alternative B's smaller project size would reduce the area  
19 within which biological resources impacts would occur. Consequently, biological resources-  
20 related impacts associated with decommissioning of Alternative B would be reduced relative to  
21 Alternative A. Mitigations described for Alternative A would be the same as those required for  
22 Alternative B.

23 ***CEQA: Impact Significance Determination***

24 Because Alternative B would result in approximately 37.5 percent of the physical development of  
25 Alternative A, biological resources impacts would be comparably reduced in most cases. However,  
26 because this alternative would result in the same types of direct and indirect impacts to biological  
27 resources, significance conclusions for the impacts identified for each phase of Alternative B  
28 (Construction, Operation and Maintenance, and Decommissioning) would be the same as described  
29 for Alternative A. Mitigations described for Alternative A would be the same as required for  
30 Alternative B.

31 **Mitigation Measures**

32 Implement Mitigation Measures MM 3.5-1a through MM 3.5-13a for the solar facility portion of  
33 the project and Mitigation Measures MM 3.5-1b through 3.5-15b for the gen-tie portion of the  
34 project (see Section 3.5.5 for mitigation measures).

35 **Level of Significance after Mitigation**

36 Impacts would be less than significant.

### 3.5.3.3 Alternative C: No Action/No Project

#### ***NEPA: Environmental Impacts***

Under this alternative, none of the components proposed under Alternative A would be built. If Alternative C were implemented, there would be no changes to onsite conditions or existing biological resources, including general vegetation and wildlife resources, special-status plants, special-status wildlife, and sensitive habitats. No mitigation is required.

#### ***CEQA: Impact Significance Determination***

Alternative C would result in no impacts to biological resources in the project site, including general vegetation and wildlife resources, special-status plants, special-status wildlife, and sensitive habitats.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Level of Significance after Mitigation**

No Impacts.

## 3.5.4 Cumulative Impact Analysis

### 3.5.4.1 NEPA: Cumulative Environmental Impacts

#### ***General Vegetation and Wildlife***

A large number of cumulative projects have occurred or are proposed in the Regional Setting area surrounding the proposed project, as presented in Chapter 3.0. The area included in the description of the Regional Setting is considered the geographic scope of the cumulative impacts analysis. While some of these projects are located on previously disturbed lands such as those within developed areas or on lands currently in agricultural use, many are also on or proposed on undeveloped lands in native habitats, similar to the proposed project.

Cumulatively, the proposed project adds to the direct removal of regional native habitats and thus removal of general vegetation and wildlife species. Cumulative indirect impacts are also possible through increased fragmentation of habitat and introduction or increases of non-native plants and wildlife.

Of particular concern is the potential for cumulative indirect impacts to birds, particularly during migration periods. Impacts could result either from mortality or injury caused by colliding with project infrastructure, or by birds landing but unable to regain flight and eventually perishing from predation or dehydration. Cumulatively, when this project is added to other regional projects, especially nearer (within approximately 10 miles) and larger (greater than 500 acres) projects such as the Addison (#36), Avalon (#40), and Rising Tree (#51) wind projects listed on Table 3-1, these effects could be significant as these additive effects may increase the chances for large numbers of birds to be affected. To date, impacts from solar PV projects have shown lower rates of avian mortalities than those found at wind or solar thermal project (USFWS, 2014a), thus the potential

1 incremental impacts from this project are less likely to significantly contribute to regional mortality  
2 than other larger projects in the regional setting area using those technologies.

3 Without implementation of proposed project mitigation, these impacts could combine with impacts  
4 of other projects to result in a significant cumulative impact. Implementation of Mitigation  
5 Measures MM 3.5-1a, and MM 3.5-3a through MM 3.5-12a for the solar facility portion of the  
6 project, as well as Mitigation Measures MM 3.5-1b, MM 3.5-2b, and MM 3.5-4b through MM 3.5-  
7 11b for the gen-tie portion of the project, would reduce these impacts. Mitigation Measure MM  
8 3.5-7a includes preparation and approval of a Bird Conservation Strategy in which project-specific  
9 monitoring, project controls in the event that certain thresholds are met, and other requirements  
10 would be identified to address and reduce potential avian mortality. These mitigation measures  
11 would ensure that impacts from this project would be avoided, minimized, and mitigated, thereby  
12 not creating a significant contribution to cumulative impacts in the region.

### 13 ***Special-Status Plants***

14 Cumulatively, the proposed project adds to the direct removal of special-status plants being  
15 removed in the regional setting area, when this project is added to other regional projects, especially  
16 nearer (within approximately 10 miles) and project with larger direct impacts to the surface (greater  
17 than 1,000 acres) such as the Golden Queen Mining project (#45). Cumulative indirect impacts are  
18 also possible through the introduction or increase of non-native plants that can out-compete native  
19 species. Without mitigation implemented for the proposed project, these impacts would be  
20 significant. Implementation of Mitigation MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-5a for  
21 the solar facility portion of the project, and Mitigation Measures MM 3.5-1b and MM 3.5-2b for  
22 the gen-tie portion of the project, would reduce these impacts to a less-than-significant level. These  
23 mitigation measures would ensure that impacts from this project would be avoided, minimized, and  
24 mitigated, thereby not creating a significant contribution to cumulative impacts in the region.

### 25 ***Special-Status Wildlife***

26 Cumulatively, the proposed project adds to the direct removal of special-status wildlife being  
27 removed in the regional setting area, including listed species such as the federally and state  
28 threatened desert tortoise and state threatened Swainson's hawk (during migration and dispersal).  
29 Cumulative indirect impacts are also possible through the introduction or increase of non-native  
30 plants that can out-compete native species needed for forage, also potentially affecting prey  
31 populations for predators. Introductions or increases in non-native predator populations are also a  
32 potentially-significant result of these projects cumulatively as they could alter the native  
33 populations in the regional setting area.

34 For land-based species such as the desert tortoise and for dispersing and migrating species such as  
35 the Swainson's hawk, the regional projects that would most add to the cumulative effects on these  
36 species are those that are nearer (within approximately 10 miles) and have larger direct footprints  
37 (greater than 1,000 acres) projects such as the Golden Queen Mining project (#45). However, the  
38 regional setting is not known to support large populations of either desert tortoise, and these species  
39 were not found during surveys at the Golden Queen Mine. The Swainson's hawk is also likely to  
40 be more affected by regional wind projects than PV solar projects, especially those near and larger  
41 projects such as the Addison (#36), Avalon (#40), and Rising Tree (#51) wind projects.

1 Additionally, the EUL Study Area and gen-tie are not within 5 miles of any CNDDDB nesting  
2 occurrence of Swainson’s hawk, so likelihood of nesting, or of nesting Swainson’s hawks foraging  
3 on the site, is low.

4 Nonetheless, without mitigation implemented for the proposed project, these impacts would be  
5 significant. Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-3a, and MM 3.5-6a  
6 through MM 3.5-12a for the solar facility portion of the project, and Mitigation Measures MM 3.5-  
7 1b, MM 3.5-2b, and MM 3.5-4b through MM 3.5-11b for the gen-tie portion of the project, would  
8 reduce these impacts to a less-than-significant level.

9 These mitigation measures would ensure that impacts from this project would be avoided,  
10 minimized, and mitigated, thereby not creating a significant contribution to cumulative impacts in  
11 the region.

### 12 ***Sensitive Habitats***

13 Although the impacts of the proposed project alone to sensitive habitats is not likely to be  
14 significant, the cumulative impacts of all of these projects within the regional setting area creates a  
15 situation where the proposed project adds to the direct removal of Joshua tree woodlands.  
16 Cumulative indirect impacts to both Joshua tree woodlands and wildlife movement corridors are  
17 also possible through increased fragmentation of habitat and introduction or increases of non-native  
18 plants.

19 Without mitigation implemented for the proposed project, these impacts would be significant.  
20 Implementation of Mitigation Measures MM 3.5-1a, MM 3.5-3a, MM 3.5-4a, and MM 3.5-13a for  
21 the solar facility portion of the project, and Mitigation Measures MM 3.5-1b, MM 3.5-2b, MM 3.5-  
22 13b, MM 3.5-14b, and MM 3.5-15b for the gen-tie portion of the project, would reduce these  
23 impacts to a less-than-significant level. These mitigation measures would ensure that impacts from  
24 this project would be avoided, minimized, and mitigated, thereby not creating a significant  
25 contribution to cumulative impacts in the region.

### 26 **3.5.4.2 CEQA: Cumulative Impact Significance Determination**

27 Cumulative impacts to biological resources resulting from implementation of the proposed project  
28 and other cumulative projects in the area would be less than significant with implementation of  
29 Mitigation Measures MM 3.5-1a through MM 3.5-13a for the solar facility portion of the project  
30 and Mitigation Measures MM 3.5-1b through 3.5-15b for the gen-tie portion of the project. These  
31 mitigation measures would ensure that impacts from this project would be avoided, minimized, and  
32 mitigated, thereby not creating a significant contribution to cumulative impacts in the region.

### 33 ***Level of Significance after Mitigation***

34 Cumulative impacts would be less than significant (see Section 3.5.5 for mitigation measures).

## 3.5.5 Mitigation Measures

### 3.5.5.1 Solar Facility Mitigation Measures

**MM 3.5-1a: Biological Monitoring.** // **Word Processing: Please fix fonts and alignment throughout the mitigation measures. Thanks!!!** // Prior to the issuance of grading or building permits, the project proponent shall retain a Lead Biologist who has experience with western Mojave Desert wildlife, is familiar with listed and other special-status species from the project vicinity, has experience with construction compliance monitoring, and is familiar with the ecosystems on and near the project site to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist shall be assisted by qualified biological monitors. Resumes for the Lead Biologist and qualified biological monitors shall be submitted and approved by the Kern County Planning and Natural Resources Department and the Edwards AFB Natural Resource Manager. The Lead Biologist and/or qualified biological monitors shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase. The Lead Biologist and qualified biological monitors shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist and qualified biological monitors shall have in her/his possession a copy of all the compliance measures while work is being conducted on the project site.

**MM 3.5-2a: Noise Mitigation.** The following measure will be implemented to avoid, minimize and mitigate potential impacts to special-status wildlife from noise:

1. Construction equipment will be restricted from use in areas where biological buffers have been established to protect nests or other potentially noise sensitive resources. Buffers will be removed when nests have fledged or failed, or resource concerns no longer exist.

**MM 3.5-3a: Worker Environmental Awareness Training and Education Program.** Prior to the issuance of grading or building permits and for the duration of construction activities, within 1 week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend a Worker Environmental Awareness Training and Education Program (WEATEP), developed and presented by the Lead Biologist. If approved by the Edwards AFB Natural Resource Manager and if in conjunction with discussion by the Lead Biologist a training video may be used in certain cases. The Training and Education shall include:

1. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program.
2. The program shall include information on the life history of the desert tortoise and migratory birds. The program shall also discuss the legal protection status of the species, the definition of “take” under the Federal Endangered Species Act. measures the project proponent is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the Federal Endangered Species Act.
3. An acknowledgement form signed by each worker indicating that Worker Environmental Awareness Training and Education Program has been completed shall be provided to the Edwards AFB Natural Resource Manager.

- 1           4. Construction workers shall not be permitted to operate equipment within the  
2           construction areas unless they have attended the Worker Environmental Awareness  
3           Training and Education Program.
- 4           5. A copy of the audio or video training, as well as a list of the names of all personnel  
5           who attended the Worker Environmental Awareness Training and Education Program  
6           and copies of the signed acknowledgement forms shall be submitted to the Kern  
7           County Planning and Natural Resources Department and the Edwards AFB Natural  
8           Resource Manager.
- 9           6. The construction crews and contractor(s) shall be responsible for unauthorized impacts  
10          from construction activities to sensitive biological resources that are outside the areas  
11          defined as subject to impacts by project permits.

12 **MM 3.5-4a: Vegetation Salvage Plan.** This measure applies to general vegetation and to special-  
13 status plants.

- 14           1. Restoration activities will be conducted in accordance with the re-vegetation plans  
15           prepared by Edwards Air Force Base (Air Force 1994; Air Force 2012) and any new  
16           scientifically proven methodology. Monitoring success of restoration efforts will be  
17           implemented for a longer period than the standard 5-year monitoring period due to  
18           slow recovery rates of re-vegetated areas in the desert. The revegetation/restoration  
19           plan shall be submitted to the Edwards AFB Natural Resources Manager for comment  
20           and approval.
- 21           2. Priority for re-vegetation will be given to desert tortoise critical habitat.
- 22           3. Project activities that would result in the removal of any vegetation in an area that was  
23           previously undisturbed (including areas that were once disturbed and now contain  
24           vegetation) may require revegetation/restoration in accordance with the Edwards Air  
25           Force Base Revegetation Plan (AFFTC/EM 1994).
- 26           4. Lands above underground utilities will be re-vegetated unless a road needs to be  
27           constructed and maintained for access and maintenance activities.
- 28           5. This project may impact sensitive plant species including alkali mariposa-lily, desert  
29           cymopterus, recurved larkspur, Barstow woolly sunflower, and sagebrush loeflingia.  
30           The proponent/contractor shall develop protocols for the surveying, translocating  
31           where appropriate, and monitoring of sensitive species in the project area. The survey,  
32           translocating, and monitoring protocols shall be documented and submitted to the  
33           Edwards AFB Natural Resources Manager for comments and approval prior to  
34           initiation of work activities. Survey and monitoring data shall be recorded and  
35           submitted to the Edwards AFB Natural Resources Manager.

36 **MM 3.5-5a: Weed Management.** Weed Management will be consistent with the EAFB Integrated  
37 Pest Management Plan and will be implemented to reduce the potential for the introduction or  
38 increase of invasive plant species during construction, operation and maintenance, and  
39 decommissioning of the proposed project. Weed Management will conform to the Integrated  
40 Natural Resources Management Plan for areas within the base boundaries and will include  
41 measures related to:

- 42           1. Equipment cleaning
- 43           2. Site soil management
- 44           3. Use of weed free products for erosion control

- 1 4. Control methods, including both industrial controls and herbicides, identifying specific  
2 herbicides and including the Pesticide Use Proposal or a schedule for completing it
- 3 5. Schedule of surveys and reporting for invasive weed identification and control, including  
4 success criteria and measures to be implemented if criteria are not met

5 This plan will be approved by the Air Force, and Kern County prior to the start of construction.

6 **MM 3.5-6a: Raven Management.** Prior to grading and construction and after operational, the  
7 following measures will be implemented to reduce Raven predation:

- 8 1. All trash and food items will be disposed of in common raven-proof containers, and  
9 regularly removed from the project site to reduce attraction of common ravens.
- 10 2. Water tanks and trucks will be maintained in good working order and free of leaks so  
11 common ravens will not be attracted to standing water.

12 **MM 3.5-7a: Bird Conservation Strategy.** To mitigate for potential impacts to special-status birds  
13 and birds protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code  
14 during construction activity, the following measures shall be implemented as part of the approval  
15 for a grading or building permit:

- 16 1. The Migratory Bird Treaty Act (MBTA) protects most birds and their active nests  
17 (nests with egg or young). Disturbance of an active bird nest with eggs/fledglings or a  
18 burrowing owl burrow is not permitted.
- 19 2. The proponent/contractor shall develop protocols for surveying and monitoring of  
20 migratory birds during both nesting and non-nesting seasons for all related work  
21 activities that may potentially harm/harass migratory birds or their active nests. The  
22 survey and monitoring protocols shall be documented and submitted to the Kern  
23 County Planning and Natural Resources Department and to the Edwards AFB Natural  
24 Resources Manager for comments and approval prior to initiation of work activities.
- 25 3. During the avian breeding season (1 February – 31 August), a qualified biologist shall  
26 conduct a preconstruction avian nesting survey no more than 3 days prior to initial  
27 vegetation clearing. Surveys need not be conducted for the entire project site at one  
28 time; they may be phased so that surveys occur within 3 days prior to clearing of  
29 specific areas of the site. No pre-construction surveys are required outside of the avian  
30 breeding season.
- 31 4. The surveying biologist must be qualified to determine the species, status, and nesting  
32 stage without causing intrusive disturbance. At no time shall the biologist be allowed  
33 to handle the nest or its eggs. The survey shall cover all reasonably potential nesting  
34 locations on and within 500 feet of the project site, if feasible—this includes ground  
35 nesting species, such as California horned lark and killdeer, all shrubs that could  
36 support nests, and suitable raptor nest sites such as nearby trees and power poles.  
37 Access shall be granted on private offsite properties prior to conducting surveys on  
38 private land. If access is not obtainable, biologists shall survey these areas from the  
39 nearest vantage point with use of spotting scopes or binoculars.
- 40 5. If construction is scheduled to occur during the non-nesting season (September 1 to  
41 January 31), no preconstruction surveys or additional measures are required.

- 1           6. If construction begins in the non-breeding season and proceeds continuously into the  
2           breeding season, no surveys are required so long as all suitable nesting sites have been  
3           cleared from the site during the non-nesting season and no new sites have been created.
- 4           7. If active nests are found, the proponent/contractor qualified wildlife biologist will  
5           determine an appropriate no-disturbance buffer requirement. If the nest(s) are found in  
6           an area where ground disturbance is scheduled to occur, the project operator shall avoid  
7           the area either by delaying ground disturbance in the area until a qualified wildlife  
8           biologist has determined that the birds have fledged or by re-locating the project  
9           component(s) to avoid the area. All no-disturbance buffers shall be delineated in the  
10          field with visible flagging or fencing material.
- 11          8. The applicant shall install power lines in conformance with Avian Power Line  
12          Interaction Committee (APLIC) standards for electrocution-reducing techniques as  
13          outlined in Suggested Practices for Avian Protection on Power Lines: The State of the  
14          Art in 2006 (APLIC, 2006), and for collision-reducing techniques as outlined in  
15          Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC,  
16          2012), or any superseding document issued by APLIC. The applicant shall monitor for  
17          new versions of the APLIC collision and electrocution guidelines and update designs  
18          or implement new measures as needed during project construction, provided these  
19          actions do not require the repurchase of previously ordered power line structures. Bird  
20          diverters and anti-electrocution features shall be maintained for the life of the project.  
21          Details of design components of bird diverters and anti-electrocution features shall be  
22          indicated on all construction plans.
- 23          9. No rodenticides shall be used on the property. All uses of herbicidal compounds shall  
24          be approved by the Edwards AFB Natural Resources Manager, comply with Edwards  
25          AFB reporting requirements, observe label and other restrictions mandated by the  
26          United States Environmental Protection Agency, California Department of Food and  
27          Agriculture, and state and federal legislation, and be applied by qualified personnel.
- 28          10. All meteorological and communication towers shall be of monopole design to avoid  
29          the use of guy wires to reduce bird collision, injury, or death.
- 30          11. All solar mount poles, fencing poles, or other hollow vertical structures shall be capped  
31          immediately after installation to prevent bird entrapment and death.
- 32          12. The proponent will develop a Bird Conservation Strategy (BCS) using data collected  
33          as part of the biological surveys of the site and any data from nearby solar and wind  
34          projects that may be relevant. The BSC shall specify one year of post-construction  
35          mortality monitoring.
- 36          13. The proponent shall develop and implement a wildlife incident reporting program.

37 **MM 3.5-8a: Desert Tortoise Oversight.** The following measures are in accordance with the terms  
38 and conditions of the U.S. Fish and Wildlife Service Biological Opinion for: Operations and  
39 Activities at Edwards Air Force Base, California (8-8-14-F-14) regarding the effects on the  
40 federally threatened desert tortoise and its critical habitat.

- 41          1. This project will require oversight by a proponent-provided authorized biologist who is  
42          approved by the U.S. Fish and Wildlife Service (USFWS) to implement the USFWS  
43          Biological Opinion for: Operations and Activities Edwards Air Force Base, California (8-  
44          8-14-F-14). The authorized biologist will oversee construction activities as well as all  
45          activities conducted prior to installation of desert tortoise exclusion fencing, and will  
46          remain available to respond to maintenance activities as necessary. The proponent shall  
47          submit a request for authorized biologist approval to the Kern County Planning and

- 1 Edwards AFB Natural Resource Manager at least 3 months prior to commencement of  
2 project activities. All incidents of non-compliance in accordance with the biological  
3 opinion or permit must be recorded and reported to the Kern County Planning and Natural  
4 Resources Department and to the Edwards AFB Natural Resource Manager.
- 5 2. If the authorized biologist is unable to perform all required monitoring/surveys, the  
6 proponent shall provide desert tortoise monitors. Desert tortoise monitors shall be approved  
7 by the authorized biologist to monitor project activities within desert tortoise habitat,  
8 ensure proper implementation of protective measures, and record and report desert tortoise  
9 and sign observations in accordance with approved protocol. The monitors will report  
10 incidents of noncompliance in accordance with a biological opinion or permit, move desert  
11 tortoises from harm's way when desert tortoises enter project sites and place these animals  
12 in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their  
13 immediate possession until an authorized biologist assumes care of the animal. Monitors  
14 shall not conduct clearance surveys or other specialized duties of the authorized biologist  
15 unless directly supervised by an authorized biologist; "directly supervised" means the  
16 authorized biologist has direct voice and sight contact with the monitor. The desert tortoise  
17 monitor may directly supervise other personnel to assist with surveying for desert tortoises  
18 when deemed necessary.
- 19 3. Authorized biologists are the only individuals approved to handle desert tortoises on base.  
20 However, nothing prohibits any individual from handling a desert tortoise when necessary  
21 to protect the safety or health of the animal when it is in immediate danger.
- 22 4. All project personnel working in the area shall attend desert tortoise awareness training  
23 prior to commencing work or visiting the work site. Training will be provided by the  
24 proponent's authorized biologist and documented per the Kern County Planning and  
25 Natural Resources Department and the Edwards AFB Natural Resource Manager  
26 instructions.
- 27 5. The *Desert Tortoise Handout* (DT Handout 412 TWPA Release #18150 20180316) shall  
28 be distributed to vehicle and equipment drivers accessing the project area and also be  
29 posted at the project site.
- 30 6. A desert tortoise pre-activity survey by the contractor's authorized biologist is required  
31 prior to commencing work. Any sightings of desert tortoises, signs of desert tortoises, or  
32 desert tortoise burrows found within the project area shall be reported immediately to the  
33 Edwards AFB Natural Resource Manager.
- 34 7. In the event that project development or activities would result in the clearing of a large  
35 area of suitable desert tortoise habitat, desert tortoises will be relocated from these sites to  
36 other habitat. All translocated desert tortoises will be monitored to determine the success  
37 of the relocation. Translocation and monitoring will be performed under the direct  
38 supervision of the contractor's authorized biologist in coordination with the Edwards AFB  
39 Natural Resources Manager.
- 40 8. The project work areas will be fenced, flagged, or marked to define the limit of project  
41 activities.
- 42 9. Vehicles will generally remain on previously established roads and within staging areas  
43 and follow flagged off-road routes that have been surveyed or cleared of desert tortoises.  
44 When driving off-road, operators will minimize disturbance to vegetation and not exceed  
45 10 miles per hour. All personnel will inspect under vehicles for desert tortoises prior to  
46 operating them in desert tortoise habitat.

- 1 10. Project activities between dusk and dawn will be confined to areas free of vegetation and  
2 cleared of desert tortoises by contractor personnel who are authorized as described above.
- 3 11. Open excavations will be checked regularly by the contractor personnel who are authorized  
4 as described above will remove any trapped animals. Open excavations will be covered,  
5 backfilled, wildlife ramps placed, or fenced at the end of each workday. At the ends of a  
6 ditch or trench, a 3: 1 slope will be created to allow wildlife to exit should they become  
7 trapped in the ditch or trench.
- 8 12. Any pipes stored within the area shall be capped on open ends or elevated at least 12 inches  
9 off the ground to prevent entry by desert tortoise or other wildlife. In the event capping is  
10 not feasible, materials will be inspected prior to movement to ensure no wildlife is trapped  
11 prior to moving materials. Installation of fencing along roadways will be implemented in  
12 areas deemed hazardous to desert tortoises to prevent injury or mortality.
- 13 13. Records will be kept according to Edwards AFB Natural Resources Manager instructions  
14 and submitted monthly to the Kern County Planning and Natural Resources Department  
15 and to Edwards AFB Natural Resources Manager regarding incidents of non-compliance  
16 with the biological opinion, acres of desert tortoise habitat disturbance, acres of habitat  
17 restoration, wildlife sightings, wildlife injury, wildlife mortality, and desert tortoise  
18 handling. Submission of Geographic Information System (GIS) deliverables will be per the  
19 most current Edwards Air Force Base Standards for GIS Deliveries.

20 **MM 3.5-9a: Nesting Birds and Raptors.** The following survey actions shall be complied with:

- 21 1. If construction is scheduled to commence during the non-nesting season (i.e.,  
22 September 1 to January 31), no preconstruction surveys or additional measures are  
23 required.
- 24 2. To avoid impacts to nesting birds in the project site, a qualified wildlife biologist shall  
25 conduct preconstruction surveys of all potential nesting habitat within the project site  
26 for construction activities that are initiated during the breeding season (i.e., February 1  
27 to August 31). The surveying biologist must be qualified to determine the status and  
28 stage of nesting by migratory birds and all locally breeding raptor species without  
29 causing intrusive disturbance.
  - 30 a. The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees,  
31 windrows) within a 0.5-mile buffer around the project site.
  - 32 b. Surveys shall be conducted no more than 3 days prior to construction activities.
  - 33 c. Surveys shall not be conducted for the entire project site at one time; they must  
34 be phased so that surveys occur shortly before a portion of the project site is  
35 disturbed.
- 36 3. If active nests are found, the proponent/contractor qualified wildlife biologist will  
37 determine an appropriate no-disturbance buffer requirement and no construction within  
38 the buffer allowed until the Lead Biologist or onsite qualified biological monitor has  
39 determined that the nest is no longer active (e.g., the nestlings have fledged and are no  
40 longer reliant on the nest). Encroachment into the buffer may occur at the discretion of  
41 the Lead Biologist or onsite qualified biological monitor.

42 **MM 3.5-10a: Preconstruction Clearance Surveys.** Preconstruction surveys for desert kit fox,  
43 American badger, and Mohave ground squirrel shall be conducted within the project boundaries by  
44 the Lead Biologist or qualified biological monitor within 14 days of the start of any vegetation  
45 clearing or grading activities. Methodology for preconstruction surveys shall be consistent with

1 standard industry practice for conducting these surveys, and may be conducted simultaneously with  
2 preconstruction surveys for desert tortoise and burrowing owl. Surveys shall not be conducted for  
3 all areas of suitable habitat at one time; they must be phased so that surveys occur within 30 days  
4 of the portion of the project site being disturbed. If any evidence of occupation of the project site  
5 by desert kit fox or American badger is observed, a buffer shall be established by a qualified  
6 biological monitor that results in sufficient avoidance, as described below:

7 1. Preconstruction surveys shall be conducted by the Lead Biologist or onsite qualified  
8 biological monitors for the presence of American badger or desert kit fox dens within 30  
9 days prior to commencement of construction activities. The surveys shall be conducted in  
10 areas of suitable habitat for American badger and desert kit fox, which includes desert  
11 scrub habitats. Surveys need not be conducted for all areas of suitable habitat at one time;  
12 they may be phased so that surveys occur within 14 days prior to that portion of the project  
13 site disturbed. If potential dens are observed and avoidance is feasible, the following buffer  
14 distances shall be established prior to construction activities (except for use of existing  
15 roads by rubber-tired vehicles):

- 16 a. Desert kit fox or American badger potential den: 30 feet.  
17 b. Desert kit fox or American badger active den: 100 feet.  
18 c. Desert kit fox occupied natal den (during natal season): 500 feet. Natal season for  
19 desert kit fox is January 1 through August 31. Active natal dens may become  
20 inactive prior to August 31. The Lead Biologist or qualified biological monitor can  
21 determine natal den status through remote camera monitoring, in consultation with  
22 CDFW.  
23 d. If avoidance of the potential dens is not possible, the following measures are  
24 required to avoid potential adverse effects to the American badger and desert kit  
25 fox:

- 26 i. If the Lead Biologist or onsite qualified biological monitor determines that  
27 potential dens are inactive, the biologist shall excavate these dens by hand  
28 with a shovel to prevent American badgers or desert kit foxes from re-  
29 using them during construction.  
30 ii. If the Lead Biologist or onsite qualified biological monitor determines that  
31 potential dens may be active, an onsite passive relocation program shall  
32 be implemented for non-natal dens. This program shall consist of  
33 determining status of the den (active natal or active non-natal), excluding  
34 American badgers or desert kit foxes from occupied burrows by  
35 installation of one-way doors at burrow entrances, monitoring of the  
36 burrow for 7 days to confirm usage has been discontinued, and excavation  
37 and collapse of the burrow to prevent reoccupation. After the Lead  
38 Biologist or onsite qualified biological monitor determines that American  
39 badgers or desert kit foxes have stopped using the dens within the project  
40 boundary, the dens shall be hand-excavated with a shovel to prevent re-  
41 use during construction. Passive relocation of natal dens is limited to  
42 outside the natal season (January 1 through August 31) or after the Lead  
43 Biologist or onsite qualified biological monitor documents that the natal  
44 den has become inactive.  
45 iii. During fencing, vegetation clearing, and initial grading activities, daily  
46 monitoring reports shall be prepared by the onsite qualified biological  
47 monitors. The Lead Biologist shall prepare a summary monitoring report

1 documenting the effectiveness and practicality of the protection measures  
2 that are in place and making recommendations for modifying the measures  
3 to enhance species protection, as needed. The report shall also provide  
4 information on the overall activities conducted related to biological  
5 resources, including the Worker Environmental Awareness Training and  
6 Education Program, preconstruction surveys, monitoring activities, and  
7 any observed special-status species, including injuries and fatalities. These  
8 monitoring reports shall be submitted to the Kern County Planning and  
9 Natural Resources Department and to the Edwards AFB Natural  
10 Resources Manager on a monthly basis along with copies of all survey  
11 reports.

- 12 2. If Mohave ground squirrels are found during pre-construction surveys, measures for  
13 avoiding and minimizing impacts to Mohave ground squirrels shall include the following:
- 14 a. Methods demonstrated to be suitable for excluding Mohave ground squirrels from  
15 the work area, such as fencing.
  - 16 b. Measures and procedures related to regular monitoring of construction for  
17 presence of Mohave ground squirrels.
  - 18 c. A requirement to immediately cease work if a Mohave ground squirrel occurs in a  
19 work area.
  - 20 d. Requirements for worker education material as it pertains to Mohave ground  
21 squirrels.
  - 22 e. Reporting requirements to include providing any reports to the Edwards AFB  
23 Natural Resources Manager.
  - 24 f. Approved Methods for translocating Mohave ground squirrels occupying areas  
25 where avoidance is not feasible.
  - 26 g. Identification of suitable Locations for relocating Mohave ground squirrels.

27 If relocation of Mohave ground squirrel is necessary, the applicant shall coordinate with CDFW  
28 and the Edwards AFB Natural Resources Manager.

29 **MM 3.5-11a: Burrowing Owl Surveys and Avoidance/Relocation.**

- 30 1. No more than 14 days prior to ground-disturbing activities (vegetation clearance,  
31 grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing  
32 owl survey experience) shall conduct a pre-construction take avoidance survey on and  
33 within 200 meters (656 feet) of the construction zone (where legally accessible) to  
34 identify occupied breeding or wintering burrowing owl burrows.
- 35 2. The take avoidance burrowing owl survey shall be conducted in accordance with the Staff  
36 Report on Burrowing Owl Mitigation (2012 Staff Report; CDFW, 2012) and shall consist  
37 of walking parallel transects 7 to 20 meters (23 to 66 feet) apart, adjusting for vegetation  
38 height and density as needed, and noting any burrows with fresh burrowing owl sign or  
39 presence of burrowing owls. Note that owl sign can wash away during rain events and  
40 may take several days to build back up again. As each burrow is investigated, biologists  
41 shall also look for signs of American badger and desert kit fox. Copies of the burrowing  
42 owl survey results shall be submitted to the Kern County Planning and Natural Resources  
43 Department and the Edwards AFB Natural Resources Manager prior to ground-  
44 disturbing activities.

- 1 a. If burrowing owls are detected on site, no ground-disturbing activities shall be  
2 permitted within 200 meters (656 feet) of an occupied burrow during the breeding  
3 season (February 1 to August 31), unless otherwise authorized by CDFW. During the  
4 nonbreeding season (September 1 to January 31), ground-disturbing work can  
5 proceed near active burrows as long as the work occurs no closer than 50 meters (165  
6 feet) from the burrow or as allowed by CDFW. Depending on the level of disturbance  
7 and proposed measures, a smaller buffer may be established in consultation with  
8 Lead Biologist.
- 9 b. If avoidance of active burrows is infeasible during the nonbreeding season, then a  
10 Burrowing Owl Relocation Plan will be developed in coordination with the Edwards  
11 AFB Natural Resources Manager. If the owls are not in danger of direct impact, then  
12 the default should always be to allow the owls to decide whether they would like to  
13 leave the existing burrow site. A component of this is to provide replacement burrows  
14 at a 2:1 ratio in nearby suitable habitat, or verify that suitable unoccupied burrows  
15 are available nearby. If the owls must be relocated, then before breeding behavior is  
16 exhibited and after the burrow is confirmed empty by site surveillance and scoping,  
17 a qualified biologist shall implement a passive relocation program in accordance with  
18 Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and  
19 Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation  
20 (CDFW, 2012). Passive relocation consists of excluding burrowing owls from  
21 occupied burrows and providing suitable artificial burrows nearby for the excluded  
22 burrowing owls. Three consecutive days of negative game camera results are needed  
23 to verify absence. This is further supported, by scoping with an endoscope  
24 immediately prior to burrow dismantling. It is important to completely collapse the  
25 burrow network when closing the burrow.

26 **MM 3.5-12a: Trench Monitoring Requirements.** During construction and decommissioning of  
27 the project, all trenches or holes shall be provided with one or more escape ramps constructed of  
28 earthen fill or wooden planks (with a minimum 1 foot in width) for the protection of wildlife species  
29 and must be inspected by the Lead Biologist, qualified biological monitor, designated compliance  
30 manager, project operator, or contractor prior to being filled.

- 31 1. Any such features that are left open overnight will be searched each day and prior to  
32 construction activities to ensure no animals are trapped. Work will not continue until  
33 trapped animals have moved out of open trenches. Open excavations of any kind created  
34 during project activities shall be secured at the end of each day by backfilling, placing a  
35 cover over the excavation, installing a temporary 412 CEG/CEVA-approved desert tortoise  
36 fence, and/or ramping excavations at a 3:1 slope.
- 37 2. All open holes, sumps, and trenches within the Project footprint shall be inspected at the  
38 beginning, middle, and end of each day for wildlife. If any animals are found in an  
39 excavation, immediately notify 412 CEG/CEVA
- 40 3. All trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:3 slope  
41 shall be covered, when workers or equipment are not actively working in the excavation,  
42 which includes cessation of work overnight, or shall have an escape ramp of earth or a non-  
43 slip material (with a minimum 1 foot in width) with a less than 1:3 slope. Where an escape  
44 ramp is required, it shall be placed at least every 300 feet. To prevent inadvertent  
45 entrapment of wildlife, when covers are required according to the conditions outlined  
46 above, a qualified biological monitor or designated compliance manager shall oversee the  
47 covering of all excavated, trenches, holes, sumps, or other excavations with a greater than  
48 1:4 slope of any depth with barrier material (such as hardware cloth) at the close of each

1 working day such that wildlife are unable to dig or squeeze under the barrier and become  
2 entrapped, or excavations shall have an escape ramp of earth or a non-slip material (with a  
3 minimum 1 foot in width) with a less than 1:3 slope.

4 4. The outer 2 feet of excavation cover, shall conform to solid ground so that gaps do not  
5 occur between the cover and the ground and secured with soil staples or similar means to  
6 prevent gaps. Each morning, mid-day, the end of each day (including weekends and any  
7 other non-work days), and immediately before trenches, holes, sumps, or other excavations  
8 are back-filled, a qualified biological monitor or designated compliance manager shall  
9 thoroughly inspect for wildlife. If wildlife is observed, all activities in the vicinity shall  
10 cease and the onsite qualified biological monitor or Lead Biologist shall be consulted.

11 5. Trenches, holes, sumps, or other excavations that are covered long term shall be inspected  
12 at the beginning of each working day to ensure inadvertent entrapment has not occurred.

13 6. If any worker discovers that wildlife has become trapped, all activities in the vicinity shall  
14 cease and Lead biologist or the onsite qualified biological monitor shall be notified  
15 immediately. Project workers guided by the Lead Biologist or qualified biological monitor  
16 shall allow the trapped wildlife to escape unimpeded before activities are allowed to  
17 continue. If the entrapped animal is a federal- or state-listed species and an ITP has been  
18 acquired by the project proponent for that species or the species is covered by an existing  
19 biological opinion (BO), only a Designated Biologist and/or Authorized Biologist as  
20 defined in the terms of the ITP(s) or BO may capture and relocated the animal in  
21 accordance with the project ITP or BO provisions. If the entrapped animal is a Federal- or  
22 State-listed species and an ITP or BO has not been acquired by the project proponent for  
23 that species, the project proponent should contact the appropriate wildlife agency  
24 immediately.

25 A log shall be kept and provided to the Kern County Planning and Natural Resources Department  
26 and the Edwards AFB Natural Resources Manager monthly during construction and  
27 decommissioning indicating compliance.

28 **MM 3.5-13a: Joshua Tree Woodland Preservation.** If avoidance of Joshua tree woodland  
29 (defined as areas with 10 percent or more of coverage by Joshua tree) is not feasible, then a Joshua  
30 Tree Woodland Preservation Plan, approved by the Kern County Planning and Natural Resources  
31 Department and the Edwards AFB Natural Resources Manager, shall be required. The plan shall  
32 detail the number of acres Joshua trees woodland to be removed and outline a compensatory  
33 mitigation approach based on one or a combination of the following options: (1) payment of an in  
34 lieu fee to or purchase of mitigation credits from a third-party organization; or (2) the purchase of  
35 mitigation lands at a minimum 1:1 ratio for each acre of impacted Joshua tree woodlands.

36 If purchase of mitigation land is pursued, the following shall be completed: (1) a deed restriction,  
37 conservation easement, or similar instrument shall be established on the mitigation land; (2) a  
38 management plan to maintain habitat conditions on the site must be prepared and implemented;  
39 and (3) a non-wasting endowment sufficient to implement the management plan must be provided.  
40 The mitigation lands shall provide habitat at a 1:1 ratio for impacted Joshua tree woodlands,  
41 comparable to the woodlands to be impacted by the project (e.g., similar abundance and size of  
42 Joshua trees, similar levels of disturbance or habitat degradation, etc.). The management plan shall  
43 specify maintenance and monitoring requirements for the preserved land. Suitable mitigation lands  
44 provided for other resources may be used for Joshua tree woodland mitigation.

1 **3.5.5.2 Gen-tie Mitigation Measures**

2 **MM 3.5-1b: Biological Monitoring.** Prior to the issuance of grading or building permits for  
3 generation tie-line construction, the project proponent shall retain a qualified biologist(s) who  
4 meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service to  
5 oversee compliance with protection measures for all listed and other special-status species.

- 6 1. The project qualified biologist(s) shall be onsite during ground disturbing activities  
7 throughout the generation tie-line construction phase. Ground disturbing activities  
8 include, but are not limited to: mowing, brush clearance, grubbing, excavation,  
9 trenching, grading, cut and roll vegetation clearing, drilling, equipment laydown or  
10 parking.
- 11 2. The project qualified biologist(s) shall have the right to halt all activities that are in  
12 violation of the special-status species protection measures. Work shall proceed only  
13 after hazards to special-status species are removed and the species is no longer at risk.
- 14 3. The project qualified biologist(s) shall have in her/his possession a copy of all the  
15 biological compliance measures while work is being conducted onsite.
- 16 4. Prior to issuance of grading or building permits for the generation tie-line construction,  
17 contact information for the qualified biologist(s) shall be submitted to the appropriate  
18 Kern County Planning and Natural Resources Department.

19 Any individuals who undertake biological monitoring and mitigation tasks shall be supervised by  
20 the qualified biologist(s) and shall have the appropriate education and experience to accomplish  
21 biological monitoring and mitigation tasks. Biological monitors shall comply with the above  
22 measures.

23 **MM 3.5-2b: Worker Environmental Awareness Training and Education Program.** Prior to  
24 the issuance of grading or building permits and for the duration of generation tie-line construction  
25 activities, within 1 week of employment all new construction workers at laydown area and/or  
26 generation tie-line transmission routes shall attend a Worker Environmental Awareness Training  
27 and Education Program (WEATEP), developed and presented by the Lead Biologist. The Training  
28 and Education shall include:

- 29 1. Any employee responsible for the operations and maintenance or decommissioning of  
30 the project generation tie-line facilities shall also attend the Worker Environmental  
31 Awareness Training and Education Program.
- 32 2. The program shall include information on the life history of the desert tortoise;  
33 burrowing owl; golden eagle, Swainson's hawk, and other raptors; nesting birds;  
34 American badger; desert kit fox; as well as other wildlife and plant species that may be  
35 encountered during generation tie line installation activities. The program shall also  
36 discuss the legal protection status of each species, the definition of "take" under the  
37 Federal Endangered Species Act and California Endangered Species Act, measures the  
38 project proponent is implementing to protect the species, reporting requirements,  
39 specific measures that each worker shall employ to avoid take of wildlife species, and  
40 penalties for violation of the Federal Endangered Species Act or California Endangered  
41 Species Act.
- 42 3. An acknowledgement form signed by each worker indicating that Worker  
43 Environmental Awareness Training and Education Program has been completed would  
44 be kept on record.

- 1           4. A sticker shall be placed on hard hats indicating that the worker has completed the  
2           Worker Environmental Awareness Training and Education Program. Construction  
3           workers shall not be permitted to operate equipment within the generation tie-line  
4           construction areas unless they have attended the Worker Environmental Awareness  
5           Training and Education Program and are wearing hard hats with the required sticker.
- 6           5. A copy of the training transcript and/or training video, as well as a list of the names of  
7           all personnel who attended the Worker Environmental Awareness Training and  
8           Education Program and copies of the signed acknowledgement forms shall be  
9           submitted to the Kern County Planning and Natural Resources Department.
- 10          6. A copy of the training transcript, training video or informational binder (including such  
11          information as trenching protection for kit fox requirements) for specific procedures  
12          shall be kept available for all personnel to review and be familiar with as necessary.
- 13          7. The generation tie-line construction crews and contractor(s) shall be responsible for  
14          unauthorized impacts from generation tie-line construction activities to sensitive  
15          biological resources that are outside the areas defined as subject to impacts by project  
16          permits. (See MM 3.5-4 (2))

17       **MM 3.5-3b: Noise, Dust and Lighting Mitigation.** The following measure will be implemented  
18       to avoid, minimize and mitigate potential impacts to special-status wildlife from noise:

- 19           1. Construction equipment will be restricted from use in areas where biological buffers  
20           have been established to protect nests or other potentially noise sensitive resources.  
21           Buffers will be removed when nests have fledged or failed, or resource concerns no  
22           longer exist.
- 23           2. Implement dust mitigation per Mitigation Measures MM 3.3-1b through MM 3.3-8b  
24           above.
- 25           3. Night lighting will be kept to the minimum required to conduct project activities and  
26           ensure human safety and site security.

27       **MM 3.5-4b: General Avoidance.** During construction and decommissioning of generation tie-  
28       lines, the project proponent or contractor shall implement the following general avoidance and  
29       protective measures:

- 30           1. Prior to conducting vegetation clearing or grading activities associated with  
31           construction or decommissioning of generation tie-lines, a qualified biologist or  
32           biological monitor that has been approved by the qualified biologist shall survey the  
33           area immediately prior to conducting these activities to ensure that no special-status  
34           animals are present. A qualified biologist or biological monitor shall monitor all initial  
35           generation tie-line installations and decommissioning ground-disturbance activities. A  
36           report of those activities shall be submitted to the Kern County Planning and Natural  
37           Resources Department.
- 38           2. Based on the results of generation tie-line pre-construction surveys, if any evidence of  
39           occupation of the site by listed or other special-status species is observed, a no-  
40           disturbance buffer shall be established by a qualified biologist that results in sufficient  
41           avoidance, as described below. If sufficient avoidance cannot be established,  
42           construction shall cease in the vicinity of the Animal. For State and/or federally listed  
43           species, the U.S. Fish and Wildlife Service and/or California Department of Fish and  
44           Wildlife, as appropriate depending on the species, shall be contacted for further  
45           guidance and consultation on additional measures required.

- 1           3. All proposed impact areas, including generation-tie line, staging areas, access routes,  
2           and disposal or temporary placement of spoils, shall be delineated with stakes and/or  
3           flagging prior to construction to avoid natural resources where possible. Generation  
4           tie-line construction-related activities outside of the impact zone shall be avoided.
- 5           4. Access roads that are planned for use during generation tie-line installation shall not  
6           extend beyond the planned impact area. All vehicle traffic shall be contained within  
7           the planned impact area or in previously disturbed areas. Where new access routes are  
8           required, the route will be clearly marked (i.e., flagged and/or staked) prior to  
9           generation tie-line construction.
- 10          5. If exclusion fencing is required by any consulting Resource Agency (i.e., California  
11          Department of Fish and Wildlife, and U.S. Fish and Wildlife Service), the site shall be  
12          fenced with a temporary exclusion fence to keep special-status terrestrial wildlife  
13          species, including desert tortoise, from entering during construction. This exclusion  
14          fencing shall be constructed of silt fence material, metal flashing, plastic sheeting, or  
15          other materials that will prohibit wildlife from climbing the fence or burrowing below  
16          the fence. The fencing shall be buried approximately 12 inches below the surface and  
17          extend a minimum of 30 inches above grade. Fencing shall be installed prior to  
18          issuance of grading or building permits and shall be maintained during all phases of  
19          generation tie-line installation and decommissioning. The fencing shall be inspected  
20          by an authorized biologist approved by the Resource Agencies weekly and  
21          immediately after all major rainfall events through the duration of construction and  
22          decommissioning activities. Any needed repairs to the fence shall be performed on the  
23          day of their discovery. Exclusion fencing shall be removed once generation tie-line  
24          construction or decommissioning activities are complete. Outside temporarily fenced  
25          exclusion areas, the project proponent/operator shall limit the areas of disturbance.  
26          Parking areas, new roads, staging, storage, excavation, and disposal site locations shall  
27          be confined to the smallest areas possible. These areas shall be flagged and disturbance  
28          activities, vehicles, and equipment shall be confined to these flagged areas. When  
29          consultation with the Resource Agency is required, such Resource Agency may impose  
30          additional requirements.
- 31          6. To prevent inadvertent entrapment of desert kit foxes, badgers, or other animals during  
32          construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall  
33          be covered with plywood or similar materials at the close of each working day, or  
34          provided with one or more escape ramps constructed of earth fill or wooden planks that  
35          are no less than 12 inches wide and secured at the top and spaced at 100 foot intervals.  
36          Covered and non-covered holes or trenches shall be thoroughly inspected for trapped  
37          animals by a qualified biologist or their biological monitor at the beginning and end of  
38          each day, including non-work days. Immediately before such holes or trenches are  
39          filled, they shall again be thoroughly inspected by trained staff approved by the  
40          retained qualified biologist for trapped animals. If trapped animals are observed,  
41          escape ramps or structures shall be installed immediately to allow escape. If a listed  
42          species is trapped, the U.S. Fish and Wildlife Service and/or California Department of  
43          Fish and Wildlife, as appropriate for the species, and Kern County Planning and  
44          Natural Resources Department shall be contacted immediately.
- 45          7. Burrowing owls, mammals, and nesting birds can use construction pipes, culverts, or  
46          similar structures for refuge or nesting. Therefore, all construction pipes, culverts, or  
47          similar structures with a diameter of 4 inches or more that are stored at a generation  
48          tie-line installation site for one or more overnight periods shall be thoroughly inspected  
49          for special-status wildlife or nesting birds before the pipe is subsequently buried,

- 1 capped, or otherwise used or moved in any way. If an animal is discovered inside a  
2 pipe, that section of pipe shall not be moved or disturbed in any way until a qualified  
3 biologist has been consulted and the animal has either moved from the structure on its  
4 own accord or until the animal has been captured and relocated by a qualified biologist  
5 holding the appropriate handling permits from the Resource Agencies.
- 6 8. No vehicle or equipment parked on the tie-line sites shall be moved prior to inspecting  
7 the ground beneath the vehicle or equipment for the presence of wildlife. If present,  
8 the animal shall be left to move on its own, or relocated by a qualified biologist holding  
9 the appropriate handling permits from the Resource Agencies. No one shall be allowed  
10 to touch a listed species without authorization from the U.S. Fish and Wildlife Service  
11 and/or California Department of Fish and Wildlife.
- 12 9. Vehicular traffic to and from the tie-line sites shall use existing routes of travel. Cross  
13 country vehicle and equipment use outside designated work areas shall be prohibited.
- 14 10. A speed limit of 10 miles per hour shall be enforced within the limits of the generation  
15 tie-line installation project.
- 16 11. Spoils shall be stockpiled in disturbed areas that lack native vegetation when possible.  
17 Best management practices (BMPs) shall be employed to prevent erosion in  
18 accordance with the proposed project's Stormwater Pollution Prevention Plan  
19 (SWPPP) or Erosion Control Plan. All detected erosion shall be remedied within 2 days  
20 of discovery or as described in the SWPPP or Erosion Control Plan. Spoils that have  
21 been stockpiled and inactive for greater than 10 days shall be inspected by a qualified  
22 biologist for signs of special-status wildlife before moving or disturbing the spoils.
- 23 12. No refueling within or adjacent to drainages or native desert habitats (within 150 feet)  
24 shall be permitted. Contractor equipment shall be fueled on a paved area or  
25 containment bins should be placed beneath the refueling activities if not on paved  
26 roads, checked for leaks prior to operation and repaired as necessary.
- 27 13. The project proponent shall submit a Maintenance and Trash Abatement/Pest  
28 Management Program to the Kern County Planning and Natural Resources Department  
29 for review and approval. The program shall include, but not be limited to the following:
- 30 a. The project proponent/operator shall clear debris from the project area each  
31 day during construction and decommissioning of the generation tie-lines.
- 32 b. Trash and food items shall be contained in closed containers to be locked at  
33 the end of the day and removed each day during construction and  
34 decommissioning of the generation tie-lines to reduce the attractiveness to  
35 opportunistic predators such as common ravens, coyotes, and feral dogs.
- 36 c. The project proponent/operator shall erect a sign with contact information for  
37 the project proponent/operator's maintenance staff at each generation tie-line  
38 site during construction and decommissioning of gen-tie poles, as required by  
39 the Kern County Planning and Natural Resources Department.
- 40 d. Receptacles shall include provisions for a locking system to prevent  
41 pest/rodent access to food waste receptacles that shall be implemented.
- 42 14. Workers shall be prohibited from bringing pets and firearms to the project area and  
43 from feeding wildlife.
- 44 15. Collection of any plant or intentional killing of wildlife species shall be prohibited.

1 **MM 3.5-5b: Raven Management Plan.** A Raven Management Plan shall be prepared and the  
2 project will contribute to the U.S. Fish and Wildlife Service Regional Raven Management Program.  
3 The Plan will include at a minimum:

- 4 1. Identification of all common raven nests along the generation tie-line routes during  
5 installation/construction.
- 6 2. Weekly inspections during construction under all nests along the generation tie-line route  
7 for evidence of raven predation (e.g., bones, carcasses, etc.) and if evidence of listed-  
8 species predation is noted, submit a report to the U.S. Fish and Wildlife Service, California  
9 Department of Fish and Wildlife, and the Kern County Planning and Natural Resources  
10 Department within five calendar days; and
- 11 3. Provisions for the management of trash and water that could attract common ravens during  
12 the construction and decommissioning phases of the generation tie-line installation.
- 13 4. The project proponent/operator shall be required to participate in the regional  
14 comprehensive raven management plan, to address biological resources; the project  
15 proponent/operator shall be subject to compensation through the payment of a one-time fee  
16 not to exceed \$150 and no less than \$105 per disturbed acre of land during construction of  
17 gen-tie pole locations, as established by the Desert Managers Group. Payment shall be  
18 made prior to starting construction activities. Evidence of the U.S. Fish and Wildlife  
19 Service and/or California Department of Fish and Wildlife determination and payment of  
20 any required fees shall be submitted to the Kern County Planning and Natural Resources  
21 Department.

22 **MM 3.5-6b: Avian Power Line Specifications.** For generation tie-line construction, the project  
23 proponent/operator shall:

- 24 1. Construct all generation tie-lines to the 2006 Avian Power Line Interaction Committee  
25 Guidelines specifications to protect birds from electrocution and collision. Appropriate  
26 notes regarding these specifications shall be included on any grading permit, building  
27 permit or final map.
- 28 2. After construction, submit written documentation to the Kern County Planning and  
29 Natural Resources Department, and the California State Lands Commission, verifying  
30 that all generation tie- lines are constructed to the 2006 Avian Power Line Interaction  
31 Committee Guidelines. The project proponent/operator shall conform to the latest  
32 practices (as outlined in the 2006 Avian Power Line Interaction Committee Guidelines  
33 document) to protect birds from electrocution and collision.
- 34 3. Install power collection and generation tie-lines utilizing Avian Power Line Interaction  
35 Committee standards for collision reducing techniques as outlined in Suggested  
36 Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (Avian  
37 Power Line Interaction Committee, 2006).

38 **MM 3.5-7b: Nesting Birds and Raptors.** To mitigate for potential impacts to special-status birds  
39 and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during  
40 generation tie line route construction and decommissioning activities, the following measures shall  
41 be implemented as part of the approval for a grading or building permit.

- 42 1. During the avian nesting season (February 1 – August 31), a qualified biologist shall  
43 conduct a preconstruction avian nesting survey no more than 7 days prior to initial  
44 vegetation clearing. Surveys need not be conducted for the entire project site at one

1 time; they may be phased so that surveys occur within 7 days prior to clearing of  
2 specific areas of the generation tie-lines. The surveying biologist must be qualified to  
3 determine the species, status, and nesting stage without causing intrusive disturbance.  
4 At no time shall the biologist be allowed to handle the nest or its eggs. The survey shall  
5 cover all reasonably potential nesting locations on and within 500 feet of the tie line  
6 site—this including ground nesting where species, such as California horned lark and  
7 killdeer might nest, all shrubs that could support nests, and suitable raptor nest sites  
8 such as nearby trees and power poles. Access shall be granted on private offsite  
9 properties prior to conducting surveys on private land. If access is not obtainable, the  
10 biologist shall survey these areas from the nearest vantage point with use of spotting  
11 scopes or binoculars.

- 12 2. If generation tie-line construction is scheduled to occur during the non-nesting season  
13 (September 1 through February 1), no preconstruction surveys or additional measures  
14 are required for non-listed avian species.
- 15 3. If generation tie-line construction begins in the non-nesting season and proceeds  
16 continuously into the nesting season within any particular construction or  
17 decommissioning area, no surveys are required for non-listed avian species so long as  
18 all suitable nesting sites have been cleared from active construction/decommissioning  
19 areas.
- 20 4. If active nests are found, a 100-foot no-disturbance buffer shall be created around  
21 passerine species' nests unless adjusted by the qualified biologist based on the needs  
22 and sensitivities of individual species, and a 300-foot no-disturbance buffer around  
23 non-listed raptor species' nests (or a suitable distance otherwise determined in  
24 consultation with California Department of Fish and Wildlife). These buffers shall  
25 remain in effect until a qualified wildlife biologist has determined that the birds have  
26 fledged or the proposed project component(s) have been redesigned to avoid the area.  
27 All no-disturbance buffers shall be delineated in the field with visible flagging or  
28 fencing material.

29 **MM 3.5-8b: Preconstruction Desert Tortoise Surveys.** Within 14 days prior to the  
30 commencement of any ground-disturbing activities for generation tie-line construction the project  
31 proponent shall conduct preconstruction surveys for desert tortoise within each generation tie-line  
32 construction site. The surveys shall be conducted in accordance with the U.S. Fish and Wildlife  
33 Service protocol (2010). If no burrows or tortoises are discovered during preconstruction surveys,  
34 no further mitigation is necessary. A survey shall be submitted with supporting evidence included  
35 such as photographs of areas/locations that may be suitable for this habitat, etc.

36 If burrows or tortoises are identified during preconstruction surveys, project proponent shall be  
37 required to:

- 38 1. Potential burrows will be buffered by 30 feet unless they can be shown to be unoccupied  
39 or the authorized biologist believes a smaller buffer is appropriate in order to protect  
40 underground burrows. Examples of situations where smaller buffers may be appropriate  
41 may include: burrows obviously head in different direction from the impact; taking into  
42 consideration the type of activity near the burrow (i.e., will it have potential to crush a  
43 burrow); is the burrow adjacent to an existing thoroughfare that receives vehicle use  
44 already and is the proposed activity similar in nature etc.
- 45 2. All activities shall cease within 200 feet of tortoises and the tortoises shall be allowed to  
46 move off the site on their own. If desert tortoises occur in a work area and they will not

1 leave of their own accord, then it will be necessary to coordinate with the U.S. Fish and  
2 Wildlife Service and California Department of Fish and Wildlife. Physical relocation of a  
3 desert tortoise may not occur unless approved by the wildlife agencies and this may require  
4 authorizations pursuant to Incidental Take Permits from the U.S. Fish and Wildlife Service  
5 and California Department of Fish and Wildlife.

6 3. Should the applicant obtain a permit for the incidental take of desert tortoise, the applicant  
7 shall develop a plan for desert tortoise translocation and monitoring prior to gen-tie line  
8 project construction. The plan shall provide the framework for implementing the following  
9 measures:

10 a. Clearance surveys shall occur on a daily basis where construction activities occur  
11 within or adjacent to suitable desert tortoise habitat.

12 b. Any desert tortoises found during clearance surveys or pre-construction surveys,  
13 if avoiding the tortoise(s) is not feasible, shall be placed in suitable, undisturbed  
14 habitat within 500 meters (1,640 feet) of their original location. The qualified  
15 desert tortoise biologist shall determine the best location for release, based on the  
16 condition of the vegetation, soil, other habitat features, and the proximity to human  
17 activities. If desert tortoises are found in a construction area where fencing was  
18 deemed unnecessary, work will cease until the qualified desert tortoise biologist  
19 moves the tortoise(s) within 500 meters (1,640 feet) of their original location.

20 c. Relocation of any tortoises shall follow the Guidelines for Handling Desert  
21 Tortoises during Construction Projects (Desert Tortoise Council 1994, revised  
22 1999).

23 d. An Authorized Biologist shall remain on site until all vegetation is cleared and, at  
24 a minimum, conduct site and fence inspections on a monthly basis throughout  
25 construction in order to ensure project compliance with mitigation measures.

26 e. An Authorized Biologist shall remain on-call throughout fencing and grading  
27 activities in the event a desert tortoise wanders onto the gen-tie-line site.

28 f. If an incidental take permit is being obtained, compensatory mitigation for the loss  
29 of desert tortoise habitat shall be provided through purchase of credit from an  
30 existing mitigation bank, such as the Desert Tortoise Natural Area, private  
31 purchase of mitigation lands, or onsite preservation, as approved by the resource  
32 agencies. Compensatory mitigation shall be provided at a 1:1 ratio to reduce  
33 potential effects to less-than-significant levels.

34 g. Develop a plan for desert tortoise translocation and monitoring prior to project  
35 construction. The plan shall provide the framework for implementing the  
36 following measures:

37 h. If a permanent tortoise-proof wild-friendly fence is practicable, a fence shall be  
38 installed around all gen-tie line construction areas prior to the initiation of earth  
39 disturbing activities, in coordination with the Lead Biologist or on-site qualified  
40 biological monitor. The fence shall be constructed of 0.5-inch mesh hardware cloth  
41 and extend 18 inches above ground and 12 inches below ground. Where burial of  
42 the fence is not possible, the lower 12 inches shall be folded outward against the  
43 ground and fastened to the ground so as to prevent desert tortoise entry. The fence  
44 shall be supported sufficiently to maintain its integrity, be checked at least monthly  
45 during gen-tie line construction, and maintained when necessary by the project  
46 proponent to ensure its integrity. Provisions shall be made for closing off the fence

1 at the point of vehicle entry. Common raven perching deterrents shall be installed  
2 as part of the fence construction.

- 3 i. After fence installation, an Authorized Biologist shall conduct a preconstruction  
4 survey for desert tortoise within the construction site. An Authorized Biologist has  
5 the appropriate education and experience to accomplish biological monitoring and  
6 mitigation tasks and is approved by the California Department of Fish and Wildlife  
7 and the U.S. Fish and Wildlife Service. Two surveys without finding any desert  
8 tortoises or new desert tortoise sign shall occur prior to declaring the site clear of  
9 desert tortoises.
- 10 j. All burrows that could provide shelter for a desert tortoise shall be hand-excavated  
11 prior to ground-disturbing activities.
- 12 k. An Authorized Biologist shall remain on site until all vegetation is cleared and, at  
13 a minimum, conduct site and fence inspections on a monthly basis throughout  
14 construction in order to ensure project compliance with mitigation measures.
- 15 l. An Authorized Biologist shall remain on-call throughout fencing and grading  
16 activities in the event a desert tortoise wanders onto the tie-line site.

17 If an ITP is being obtained, compensatory mitigation for the loss of desert tortoise habitat shall be  
18 provided through purchase of credit from an existing mitigation bank, such as the Desert Tortoise  
19 Natural Area, private purchase of mitigation lands, or on-site preservation, as approved by the  
20 resource agencies. Compensatory mitigation shall be provided at a 1:1 ratio to reduce potential  
21 effects to less-than-significant levels.

- 22 4. The Raven Management Plan developed for the construction of the generation tie-line sites,  
23 (as noted in section MM 3.5-5) shall include at a minimum:
  - 24 a. Identification of all common raven nests within the site during construction.
  - 25 b. Weekly inspections during construction under all nests in the tie-line sites for  
26 evidence of desert tortoise predation (e.g., scutes, shells, etc.).
  - 27 c. If evidence of desert tortoise predation is noted, a report shall be submitted to the  
28 U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and  
29 the Kern County Planning and Natural Resources Department within five calendar  
30 days.
  - 31 d. Provisions for the management of trash that could attract common ravens during  
32 the construction and decommissioning phases of the generation tie-line.

33 **MM 3.5-9b: Preconstruction Burrowing Owl Surveys.** A qualified wildlife biologist (i.e., a  
34 wildlife biologist with previous burrowing owl survey experience, as demonstrated in the submitted  
35 resume for approval with the Kern County Planning and Natural Resources Department) shall  
36 conduct preconstruction surveys of the permanent and temporary impact areas to locate active  
37 breeding or wintering burrowing owl burrows within 14 days prior to ground-disturbing for  
38 generation tie-line construction activities (i.e., vegetation clearance, grading, tilling). The survey  
39 methodology shall be consistent with the methods outlined in the 2012 California Department of  
40 Fish and Game Staff Report on Burrowing Owl Mitigation and including the following:

- 41 1. Surveys shall be conducted by walking parallel transects 7 to 20 meters apart, adjusting for  
42 vegetation height and density as needed, and noting any potential burrows with fresh  
43 burrowing owl sign or presence of burrowing owls. Surveys may be conducted  
44 concurrently with desert tortoise preconstruction surveys. Photographic submissions to the

- 1 Kern County Planning and Natural Resources Department as part of survey results are  
2 encouraged regardless of surveys results.
- 3 2. As each burrow is investigated, surveying biologists shall also look for signs of American  
4 badger and desert kit fox. Copies of the survey results (including photographs) shall be  
5 submitted to California Department of Fish and Wildlife and the Kern County Planning  
6 and Natural Resources Department as part of the monthly biological monitoring reporting  
7 requirements.
- 8 3. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted  
9 within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the  
10 breeding season (i.e., February 1 to August 31), unless otherwise authorized by California  
11 Department of Fish and Wildlife. During the non-breeding (winter) season (i.e., September  
12 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer  
13 than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller  
14 buffer may be established in consultation with California Department of Fish and Wildlife.
- 15 4. If burrow avoidance is infeasible during the non-breeding season or during the breeding  
16 season where resident owls have not yet begun egg laying or incubation, or where the  
17 juveniles are foraging independently and capable of independent survival, a qualified  
18 biologist shall implement a passive relocation program in accordance with Appendix E1  
19 (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of  
20 the 2012 California Department of Fish and Game Staff Report on Burrowing Owl  
21 Mitigation.
- 22 5. If passive relocation is required, the qualified biologist shall prepare a Burrowing Owl  
23 Exclusion and Mitigation Plan and Mitigation Land Management Plan in accordance with  
24 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation  
25 for review and approval by California Department of Fish and Wildlife prior to passive  
26 relocation activities. If passive relocation is required, the project proponent shall implement  
27 the Mitigation Land Management Plan and permanently conserve in a conservation  
28 easement offsite habitat suitable for burrowing owl at ratio of 15 acres per passively  
29 relocated burrowing owl pair, not to exceed the size of the final project footprint. Land  
30 identified to mitigate for passive relocation of burrowing owl may be combined with other  
31 offsite mitigation requirements of the proposed project if the compensatory habitat is  
32 deemed suitable to support the species. The Passive Relocation Compensatory Mitigation  
33 habitat shall be approved by California Department of Fish and Wildlife. If the proposed  
34 project is located within the service area of a California Department of Fish and Wildlife-  
35 approved burrowing owl conservation bank, the project proponent may purchase available  
36 burrowing owl conservation bank credits in lieu of placing offsite habitat into a  
37 conservation easement, if acceptable to California Department of Fish and Wildlife.

38 **MM 3.5-10b: Special-Status Mammals Management Plan.** A Special-Status Mammals  
39 Management Plan will be written to avoid and minimize impacts to the Mohave ground squirrel,  
40 desert kit fox, and American badger if these resources are determined to be present on the proposed  
41 generation construction tie-line sites. If no Mohave ground squirrels are found during focused  
42 surveys, this plan will not be required and the following measures will be used to minimize impacts  
43 to American badger:

- 44 1. All dens and burrows large enough to be used by desert kit fox or American badger and in  
45 areas of potential direct impacts from generation tie-line construction (from crushing of the  
46 burrows and dens) will be carefully excavated to passively relocate these species from the  
47 immediate area. These dens will be observed by remote camera for a minimum of three

1 days prior to excavation. If any sign of breeding burrowing owls, kit fox, or American  
2 badger is present during this time, three additional days of observation will be conducted  
3 to determine whether the burrow supports an active nest or natal den. No burrows  
4 supporting a nest or natal dens will be excavated until ongoing cameras monitoring shows  
5 no behaviors related to nesting or a natal den are observed, or until outside the period of  
6 nesting and natal den activity (approximately Dec-Feb).

7 2. Speed limits on generation tie-line components will be a maximum of 20 miles per hour  
8 during the day and 10 miles per hour during the night to avoid vehicle collisions;

9 3. If any desert kit fox or American badgers are found dead, ill, or injured on the project  
10 components, California Department of Fish and Wildlife will be notified with 24 hours to  
11 determine an appropriate course of action. Mortalities will be immediately stored in a  
12 project freezer until California Department of Fish and Wildlife determines any potential  
13 needs for necropsy.

14 4. If Mohave ground squirrels are found to be present, the completion of a State permit for  
15 this species would be completed prior to the start of generation tie-line construction.

16 5. If the plan is necessary, it will be approved by the California Department of Fish and  
17 Wildlife prior to the start of generation-tie line construction.

18 **MM 3.5-11b: Trench Monitoring Requirements.** During construction and decommissioning of  
19 the generation tie-line routes, all trenches or holes more than six (6) inches deep shall be provided  
20 with one or more escape ramps constructed of earthen fill or wooden planks (with a minimum 1  
21 foot in width) for the protection of wildlife species and must be inspected by the Lead Biologist,  
22 qualified biological monitor, designated compliance manager, project operator, or contractor prior  
23 to being filled.

24 1. Any such features that are left open overnight will be searched each day and prior to  
25 construction activities to ensure no animals are trapped. Work will not continue until  
26 trapped animals have moved out of open trenches.

27 2. All open holes, sumps, and trenches within the Project generation tie-lie footprint shall be  
28 inspected at the beginning, middle, and end of each day for wildlife.

29 3. All trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1  
30 (45 degree) slope and that are between 2 and 8 feet deep shall be covered, when workers  
31 or equipment are not actively working in the excavation, which includes cessation of work  
32 overnight, or shall have an escape ramp of earth or a non-slip material (with a minimum  
33 1 foot in width) with a less than 1:1 (45 degree) slope. All trenches, holes, and other  
34 excavations with sidewalls steeper than a 1:1 (45 degree) slope and greater than 8 feet deep  
35 shall be covered or have an escape ramp of earth or a non-slip material (with a minimum  
36 1-foot in width) with a less than 1:1 (45 degree) slope, when workers or equipment are not  
37 actively working in the excavation and at the end of each work day. Where an escape ramp  
38 is required, it shall be placed every 300 feet. To prevent inadvertent entrapment of wildlife,  
39 when covers are required according to the conditions outlined above, a qualified biological  
40 monitor or designated compliance manager shall oversee the covering of all excavated,  
41 trenches, holes, sumps, or other excavations with a greater than 1:1 (45 degree) slope of  
42 any depth with barrier material (such as hardware cloth) at the close of each working day  
43 such that wildlife are unable to dig or squeeze under the barrier and become entrapped, or  
44 excavations shall have an escape ramp of earth or a non-slip material (with a minimum  
45 1 foot in width) with a less than 1:1 (45 degree) slope.

- 1 4. The outer 2 feet of excavation cover, shall conform to solid ground so that gaps do not  
2 occur between the cover and the ground and secured with soil staples or similar means to  
3 prevent gaps. Each morning, mid-day, the end of each day (including weekends and any  
4 other non-work days), and immediately before trenches, holes, sumps, or other excavations  
5 are back-filled, a qualified biological monitor or designated compliance manager shall  
6 thoroughly inspect for wildlife. If wildlife is observed, all activities in the vicinity shall  
7 cease and the onsite qualified biological monitor or Lead Biologist shall be consulted.
- 8 5. Trenches, holes, sumps, or other excavations that are covered long term shall be inspected  
9 at the beginning of each working day to ensure inadvertent entrapment has not occurred.
- 10 6. If any worker discovers that wildlife has become trapped, all activities in the vicinity shall  
11 cease and Lead biologist or the onsite qualified biological monitor shall be notified  
12 immediately. Project workers guided by the Lead Biologist or qualified biological monitor  
13 shall allow the trapped wildlife to escape unimpeded before activities are allowed to  
14 continue. If the entrapped animal is a federal- or state-listed species and an ITP has been  
15 acquired by the project proponent for that species, only a Designated Biologist and/or  
16 Authorized Biologist as defined in the terms of the ITP(s) may capture and relocated the  
17 animal in accordance with the project ITP provisions. If the entrapped animal is a Federal-  
18 or State-listed species and an ITP has not been acquired by the project proponent for that  
19 species, the project proponent should contact the appropriate wildlife agency immediately.
- 20 7. A log shall be kept and provided to the Kern County Planning and Natural Resources  
21 Department monthly during construction and decommissioning indicating compliance.

22 **MM 3.5-12b Vegetation Salvage Mitigation and Monitoring Plan (VSMMP).** If required by  
23 CDFW or LRWQCB, a Vegetation Salvage Mitigation and Monitoring Plan (VSMMP) shall be  
24 prepared that outlines the compensatory mitigation in coordination with the LRWQCB and CDFW.

- 25 1. If on-site mitigation is proposed, the VSMMP shall identify those portions of the site, such  
26 as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for  
27 restoration of alluvial desert scrub. Determination of mitigation adequacy shall be based  
28 on comparison of the restored vegetation habitat with similar, undisturbed habitat in the  
29 site vicinity (such as upstream or downstream of the site).
- 30 2. The VSMMP shall include remedial measures in the event that performance criteria are not  
31 met.
- 32 3. If mitigation is implemented offsite, mitigation lands shall be composed of similar or  
33 higher quality alluvial desert scrub and preferably located in the vicinity of the site or  
34 watershed. Off-site land shall be preserved through a deed restriction or conservation  
35 easement and the VSMMP shall identify an approach for funding assurance for the long-  
36 term management of the conserved land.
- 37 4. Copies of any coordination, permits, etc., with LRWQCB and CDFW shall be provided to  
38 the Kern County Planning and Natural Resources Department.

39 **MM 3.5-13b: Jurisdictional Waters Permitting.** Prior to gen-tie-line construction, a formal  
40 jurisdictional delineation would be prepared in areas where no previous delineation has been  
41 performed for the project that describes these resources and the extent of jurisdiction under the  
42 CDFW and RWQCB. A review of streambeds along the proposed gen-tie routes has been prepared  
43 (Dudek 2018). If it is determined during final siting that ephemeral drainages cannot be avoided,  
44 the project applicant shall be subject to provisions as identified below:

- 1 1. If avoidance is not practical, prior to ground disturbance activities that could impact these  
2 aquatic features, the project applicant shall file a complete Report of Waste Discharge with  
3 the Lahontan RWQCB to obtain Waste Discharge Requirements and shall also consult with  
4 California Department of Fish and Wildlife on the need for a streambed alteration  
5 agreement. Correspondence and copies of reports shall be submitted to the Kern County  
6 Planning and Natural Resources Department.
- 7 2. Based on consultation with the Lahontan RWQCB and CDFW, if permits are required for  
8 the project, appropriate permits shall be obtained prior to disturbance of jurisdictional  
9 resources.
- 10 3. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified  
11 and secured prior to disturbance of the features at a minimum 1:1 ratio, as approved by the  
12 RWQCB or CDFW either through onsite or offsite mitigation, or purchasing credits from  
13 an approved mitigation bank.
- 14 4. The project proponent shall comply with the compensatory mitigation required and proof  
15 of compliance, along with copies of permits obtained from RWQCB and/or CDFW, shall  
16 be provided to the Kern County Planning and Natural Resources Department.

17 **MM 3.5-14b: Joshua Tree Impact Plan.** Prior to issuance of grading or building permits for the  
18 generation tie-line installation the applicant shall develop a Joshua Tree Impact Plan. The Plan shall  
19 be prepared by a qualified biologist pre-approved by the Kern County Planning and Natural  
20 Resources Department and who is familiar with Western Mojave Desert species and ecosystems.  
21 At a minimum, the plan shall include the following:

- 22 1. Demonstration of full avoidance of Joshua trees as part of construction, indication of the  
23 number of trees and total area of Joshua tree woodland that would be impacted including a  
24 discussion of Joshua tree population age and health and the number of Joshua trees that  
25 could be relocated within the buffer area of the generation tie-lines (and suitable areas  
26 elsewhere).
- 27 2. Methods shall be specified for avoiding specific Joshua tree(s) and suitable candidates for  
28 translocation identified.
- 29 3. Avoidance measures during generation tie-line construction activities, such as delineating  
30 work areas and specific Joshua trees that shall be avoided. If necessary, Joshua trees should  
31 be flagged for protection or translocated to the onsite buffer area within sparsely vegetated  
32 and/or disturbed areas that are suitable for planting native desert species.
- 33 4. Monitoring requirements for any translocated Joshua trees that will be relocated. Post-  
34 monitoring of all translocated Joshua trees, if any, shall be required a minimum of 3 years  
35 following relocation to verify that the trees have adapted and are in good health. The Plan  
36 shall identify contingency measures if a tree or group of trees die, such as replanting and  
37 continued monitoring, or an in lieu fee payment.
- 38 5. Detail relocation methods. The root ball shall be preserved during relocation of Joshua  
39 trees. Preferably, a tree spade should be used to relocate Joshua trees in order to preserve  
40 the entirety of the tree's root ball. Success of relocated trees shall be a minimum of 90  
41 percent after 3 years. The Plan shall identify the appropriate time of year for transplanting  
42 Joshua trees, and shall consider the plant's original and transplanted physical orientation,  
43 prevailing wind direction, soil type of the original and transplanted locations, and other  
44 related attributes which may affect the successful transplantation of the Joshua tree(s). In-  
45 lieu fee monetary funding may be applied for any tree not meeting the 90 percent success  
46 rate.

- 1       6. Detail of a 3-year maintenance program for any planned relocated Joshua trees on the site,  
2       such as weed maintenance, supplemental irrigation, and support stakes.
- 3       7. The plan shall specify that a qualified biologist or biological monitor shall monitor  
4       construction and all Joshua trees removed or damaged. A monitoring report shall be  
5       submitted to the Kern County Planning and Natural Resources Department to document  
6       the condition of the Joshua trees annually for 3 years if any Joshua trees are relocated.
- 7       8. Identification of the total area of Joshua tree woodland and an estimate of the number of  
8       individual Joshua trees that will be removed and/or relocated for determining of the total  
9       funds needed to comply.

10   **MM 3.5-15b: In-lieu of Fee for Loss of Joshua Tree Woodland.** The project proponent(s) may  
11   mitigate all or part of the project's impacts to Joshua tree woodlands by funding the acquisition  
12   and management in perpetuity of Joshua tree woodland, or habitats similar to those that contain  
13   impacted Joshua trees onsite that are located within the same bioregion and/or watershed, as  
14   approved by the Kern County Planning and Natural Resources Department. Funding and  
15   management shall be provided through a Kern County approved Conservation Plan, either  
16   through an existing mitigation bank (e.g., as managed by the City of Lancaster Parks, Recreation  
17   and Arts Department) or through a third-party entity such as the Wildlife Conservation Board or a  
18   regional Land Trust. The in-lieu fee shall provide sufficient funds to acquire appropriate lands to  
19   provide habitats containing Joshua trees at a 1:1 ratio for impacted lands, comparable to the  
20   habitat to be impacted by the project based on similar abundance and size of Joshua trees, similar  
21   co-dominant vegetation, suitable soils and hydrology, and similar levels of disturbance or habitat  
22   degradation (or lack thereof). The County-approved biologist shall submit confirmation of the  
23   total area of Joshua tree woodland and an estimate of the number of individual Joshua trees that  
24   will be removed.

### 25   3.5.6   Residual Impacts after Mitigation

26   With careful and thorough implementation and monitoring of the mitigation measures listed in  
27   Section 3.5.5, no residual significant impacts would be anticipated from the proposed project within  
28   the regional setting area.



## 3.6 Cultural and Paleontological Resources

### 3.6.1 Affected Environment

This section of the EIS/EIR describes the affected environment for cultural and paleontological resources in the Proposed Action area, including the regulatory and environmental settings.

The information provided here is based primarily on three cultural resources inventories (Hale and Denniston, 2017; Hale et al., 2018; ECORP Consulting Inc., 2013), an archaeological resources evaluation report (Hale and Colston, 2019), and 10 archaeological site evaluation forms (Red Horse, 2019) provided in Appendices B5 through B8 of this EIS/EIR. All four studies were conducted in compliance with NEPA and CEQA to identify cultural resources in the project area. Because of the confidential nature of cultural resources, information regarding locations of these resources has been removed from these reports and is not included in the appendix. The Air Force has initiated and is performing ongoing consultation with the federally recognized Native American Tribes and tribal representatives identified by the Native American Heritage Commission (NAHC) in accordance with the National Historic Preservation Act (NHPA) (16 U.S. Code [USC 54 U.S. Code [U.S.C.] 300101 et. seq) and CEQA; this information is incorporated into this section.

In addition, a paleontological resources records search was conducted through the Natural History Museum of Los Angeles County (LACM), the results of which are provided in Appendix B6.

#### 3.6.1.1 Area of Potential Effects

The regulations implementing Section 106 of the NHPA (Title 36 of the Code of Federal Regulations [CFR] Section 800.16(d)) define the Area of Potential Effects (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16(d)). For purposes of complying with Section 106, the APE for this project has been defined as all areas where physical project activities would occur, including the full extent of all project components and alternatives, i.e., the on-base solar facility and off-base gen-tie route options. For the purposes of this study, the overall APE for considering effects to cultural resources is defined as the 6,000-acre enhanced-use lease (EUL) within which up to 4,000 acres of alternative solar fields could be constructed. Edwards Air Force Base (AFB) has defined 2 solar field alternatives, depicted in Figure 2 through Figure 3 as “Alternatives A and B Solar Assembly.” The Alternative A APE is approximately 4,700 acres; this APE is larger than 4,000 acres to allow for flexibility in design. Alternative B is an approximately 1,500 acre EUL APE. Alternative B is a subset of Alternative A, and contains no areas independent of Alternative A. Both Alternatives are designed around minimizing impacts to the existing resources. Alternative A is the preferred alternative.

### 3.6.1.2 Scoping Issues Addressed

The following scoping comments related to cultural and paleontological resources were provided by the San Manuel Band of Mission Indians and the NAHC. The following issues and concerns are addressed in this section:

- The San Manuel Band of Mission Indians would like to continue consultation with Edwards AFB and the County of Kern regarding sensitive archaeological sites within the project area.
- To determine whether a project will have a significant adverse effect on the environment, the lead agency will need to determine whether there are historical resources within the area of project effects.
- CEQA was amended in 2014 with Assembly Bill (AB) 52 to create a separate category of tribal cultural resources, and AB 52 applies to any project with a Notice of Preparation (NOP) or Mitigated Negative Declaration (MND) filed on or after July 2, 2015.
- A project that involves the adoption of or an amendment to a General Plan or Specific Plan, or designation of open space, is subject to Senate Bill (SB) 18, which also has consultation requirements.
- If a project is subject to NEPA, then there may be further consultation requirements under Section 106 of the NHPA.
- The NAHC recommends consultation with California Native American tribes as early as possible, and for an agency to consult with their legal counsel to ensure compliance with AB 52, SB 18, and any other appropriate law.
- The commenter provided a summary of the requirements of AB 52 and SB 18.
- Contact the appropriate California Historical Resources Information System (CHRIS) center to determine: if the APE has been surveyed, if known cultural resources are present, the probability for cultural resources to be present, and whether a survey is required.
- If a survey is required, a professional report detailing the findings and recommendations of the study must be prepared.
  - Information regarding the location of sites, human remains, and any associated funerary objects should be kept confidential in a separate confidential appendix.
  - The report must be filed at the appropriate CHRIS center within 3 months after work has been completed.
- Contact the NAHC for a search of the Sacred Lands File and a Native American Consultation List.
- The report and Mitigation Monitoring and Reporting Program should include provisions for treatment of inadvertently discovered resources, plans for the disposition of recovered cultural materials, and provisions for the treatment of inadvertently discovered human remains.

### 3.6.1.3 Regulatory Framework

Cultural resources are protected under a number of federal, state, and local regulations; Executive Orders; Presidential Memoranda; Department of Defense Instructions (DoDIs); and Air Force

1 Instructions. Legislation and guidance pertaining to cultural resources is provided in more detail in  
2 the Edwards AFB *Integrated Cultural Resources Management Plan* (ICRMP) (Edwards AFB,  
3 2010). The following section summarizes the most pertinent legislation relating to the proposed  
4 project.

## 5 **Federal**

### 6 **Section 106 of the National Historic Preservation Act**

7 Section 106 of the NHPA requires federal agencies to consider the effects of an undertaking on  
8 historic properties, which are those resources listed in or eligible for listing in the National Register  
9 of Historic Places (NRHP) (36 CFR 60.4), and to provide the Advisory Council on Historic  
10 Preservation (ACHP) an opportunity to comment on the undertaking. The Proposed Action is an  
11 undertaking with the potential to affect historic properties (36 CFR Section 800.3(a)), and therefore  
12 is subject to compliance with the requirements of the Section 106 process. The steps of the Section  
13 106 process are accomplished through consultation with the State Historic Preservation Officer  
14 (SHPO), federally recognized Native American tribes, local governments, and other interested  
15 parties. The goal of consultation is to identify potentially affected historic properties, assess effects  
16 to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such  
17 properties. The agency also must provide an opportunity for public involvement (36 CFR 800.2(d)).  
18 Consultation with Native American tribes regarding issues related to Section 106 and other  
19 authorities (such as NEPA and Executive Order No. 13007) must recognize the government-to-  
20 government relationship between the federal government and Indian tribes.

### 21 **National Register of Historic Places**

22 The National Register of Historic Places (NRHP) was established as an “authoritative guide to be  
23 used by federal, State, and local governments, private groups, and citizens to identify the Nation’s  
24 historic resources and indicate what properties should be considered for protection from destruction  
25 or impairment” (36 CFR 60.2). To be eligible for listing in the NRHP, a resource must meet at least  
26 one of the NRHP listing criteria: (a) are associated with events that have made a significant  
27 contribution to the broad patterns of our history; (b) are associated with the lives of persons  
28 significant in our past; (c) embody the distinctive characteristics of a type, period, or method of  
29 construction or that represent the work of a master, or that possess high artistic values, or that  
30 represent a significant and distinguishable entity whose components may lack individual  
31 distinction; or (d) have yielded, or may be likely to yield, information important in prehistory or  
32 history. Unless the property possesses exceptional significance, it must be at least 50 years old to  
33 be eligible for NRHP listing (36 CFR Section 60.4).

### 34 **Archeological Resources Protection Act**

35 The Archeological Resources Protection Act (ARPA) governs the excavation of archaeological  
36 sites on federal and Indian lands, as well as the removal and disposition of archeological collections  
37 from those sites. ARPA defines archaeological resources as any material remains of past human  
38 life or activities which are of archaeological interest and are over 100 years old, or items found in  
39 an archeological context on federal or Native American lands; these resources require a federal  
40 permit prior to excavation of artifacts on federal or Native American lands.

1 **Native American Graves Protection and Repatriation Act**

2 The Native American Graves Protection and Repatriation Act (NAGPRA) describes the rights of  
3 Native American lineal descendants, Native American tribes, and Native Hawaiian organizations  
4 with respect to the treatment, repatriation, and disposition of Native American human remains,  
5 funerary objects, sacred objects, and objects of culinary patrimony, or “cultural items” with which  
6 they show a relationship of lineal descent or cultural affiliation. The goal of NAGPRA is to  
7 repatriate Native American human remains, funerary objects, sacred objects and objects of cultural  
8 patrimony to culturally affiliated, federally recognized Tribes; provide greater protection for Native  
9 American burial sites; ensure more careful control over the removal of Native American human  
10 remains, funerary objects, sacred objects, and items of cultural patrimony on federal and tribal  
11 lands; and encourage the in situ preservation of archaeological sites, or at least the portions of them  
12 that contain burials or other kinds of cultural items. NAGPRA also establishes both criminal and  
13 civil penalties for violators.

14 **Paleontological Resources Preservation Act**

15 The Paleontological Resources Preservation Act offers provisions of paleontological resources  
16 identified on federal, Native American, or state lands and guidance for their management and  
17 protection, and promotes public awareness and scientific education regarding vertebrate fossils.  
18 The law also requires federal agencies to develop plans for inventory, collection, and monitoring  
19 of paleontological resources and establishes stronger criminal and civil penalties for the removal  
20 of scientifically significant fossils on federal lands.

21 **Air Force Instructions**

22 The Air Force Instruction 90-2002 directs all echelons of the Air Force to build relationships and  
23 conduct consultations with federally recognized tribes.

24 Air Force Instruction 32-7065 establishes instructions for inventory, project review, and general  
25 cultural resources management practices, with the objective of meeting or exceeding Department  
26 of Defense (DoD) Measures of Merit (DoDI 4715.16, Enclosure 5). Resources addressed include  
27 historic facilities, archaeological sites and collections, traditional cultural resources, and Native  
28 American sacred sites. Further, Air Force Instruction 32-7065 provides guidance on the  
29 development and implementation of ICRMPS (Edwards AFB, 2012).

30 **Department of Defense Guidance**

31 DoDI 4710.02, Department of Defense Interactions with Federally Recognized Tribes, provides  
32 guidance on the interaction between the DoD and federally recognized Native American Tribes,  
33 which also supplements information regarding consultation in accordance with Executive Order  
34 13175 (Consultation and Coordination with Indian Tribal Governments, and NAGPRA).

35 **American Indian Religious Freedom Act**

36 The American Indian Religious Freedom Act became law on August 11, 1978 (Public Law 95-341,  
37 42 USC 1996 and 1996a). On and after August 11, 1978, “it shall be the policy of the United States  
38 to protect and preserve for American Indians their inherent burial right of freedom to believe,  
39 express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native

1 Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and  
2 the freedom to worship through ceremonials and traditional rites.”

### 3 **Executive Order No. 13007: Indian Sacred Sites**

4 In managing federal lands, “each executive branch agency with statutory or administrative  
5 responsibility for the management of federal lands shall, to the extent practicable, permitted by law,  
6 and not clearly inconsistent with essential agency functions, (1) accommodate access to and  
7 ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely  
8 affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the  
9 confidentiality of sacred sites. Each executive branch agency with statutory or administrative  
10 responsibility for the management of federal lands shall, as appropriate, promptly implement  
11 procedures for the purposes of carrying out the provisions of this order, including, where  
12 practicable and appropriate, procedures to ensure reasonable notice is provided of proposed actions  
13 or land management policies that may restrict future access to or ceremonial use of, or adversely  
14 affect the physical integrity of, sacred sites. In all actions pursuant to this section, agencies shall  
15 comply with the executive memorandum of April 29, 1994, Government-to-Government Relations  
16 with Native American Tribal Governments.”

### 17 **State**

#### 18 **California Register of Historical Resources**

19 The California Register of Historical Resources (CRHR) was established as an authoritative means  
20 for state and local agencies, private groups, and citizens to identify the state’s resources of  
21 architectural, historical, archaeological, and cultural significance, and to indicate what properties  
22 are to be protected (Public Resources Code Section 5024.1[a]). Certain properties, including those  
23 listed or formally determined eligible for listing on the NRHP and California Historical Landmarks  
24 numbered 770 and higher, have been grandfathered into the CRHR. The State Historical Resources  
25 Commission may determine whether or not a resource may be listed in the CRHR, if it meets one  
26 or more of the criteria, which are modeled on the NRHP criteria.

#### 27 **California Points of Historical Interest**

28 California Points of Historical Interest are sites, buildings, features, or events that are of local (city  
29 or county) significance and have anthropological, cultural, military, political, architectural,  
30 economic, scientific or technical, religious, experimental, or other value. California Points of  
31 Historical Interest designated after December 1997 and recommended by the State Historical  
32 Resources Commission are also listed in the CRHR. No historic resource may be designated as  
33 both a landmark and a point. If a point is later granted status as a landmark, the point designation  
34 will be retired. In practice, the point designation program is most often used in localities that do not  
35 have a locally enacted cultural heritage or preservation ordinance.

36 To be eligible for designation as a California Point of Historical Interest, a resource must meet at  
37 least one of the following criteria:

- 38 • It is the first, last, only, or most significant of its type within the local geographic region  
39 (city or county).

- 1 • It is associated with an individual or group having a profound influence on the history of  
2 the local area.
- 3 • It is a prototype of, or an outstanding example of, a period, style, architectural movement  
4 or construction or is one of the more notable works or the best surviving work in the local  
5 region of a pioneer architect, designer, or master builder.

### 6 **California Environmental Quality Act**

7 Under CEQA (Public Resources Code Section 21084.1), a project that may cause a substantial  
8 adverse change in the significance of a historical resource is a project that may have a significant  
9 effect on the environment. CEQA Guidelines, Section 15064.5, recognize that a historical resource  
10 includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources  
11 Commission, for listing in the CRHR; (2) a resource included in a local register of historical  
12 resources, as defined in Public Resources Code Section 5020.1(k) or identified as significant in a  
13 historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g);  
14 and (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency  
15 determines to be historically significant or significant in the architectural, engineering, scientific,  
16 economic, agricultural, educational, social, political, military, or cultural annals of California by  
17 the lead agency, provided the lead agency's determination is supported by substantial evidence in  
18 light of the whole record. If a project may cause a substantial adverse change (defined as physical  
19 demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such  
20 that the significance of a historical resource would be materially impaired) in the significance of a  
21 historical resource, then the lead agency must identify potentially feasible measures to mitigate  
22 these effects (CEQA Guidelines Section 15064.5(b)(1), 15064.5(b)(4)).

23 If an archaeological site does not meet the criteria for a historical resource contained in the CEQA  
24 Guidelines, then the site may be treated as a unique archaeological resource in accordance with the  
25 provisions of CEQA Section 21083. In this case, the site is to be treated in accordance with the  
26 provisions of Section 21083.2, which state that the lead agency may require reasonable efforts be  
27 made to permit any or all of these resources to be preserved in place (Public Resources Code  
28 Section 21083.1(a)). If preservation in place is not feasible, mitigation measures are required.

### 29 **Native American Heritage Commission**

30 The NAHC maintains the inventory of places of religious or social significance to Native  
31 Americans on public lands. California Public Resources Code Section 5097.98 specifies a protocol  
32 to be followed when the NAHC receives notification of a discovery of Native American human  
33 remains from a County Coroner.

### 34 **Assembly Bill 52 and Related Public Resources Code Sections**

35 AB 52 was approved by California State Governor Edmund Gerald "Jerry" Brown, Jr. on  
36 September 25, 2014. The act amended California Public Resources Code Section 5097.94, and  
37 added Public Resources Code Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09,  
38 21084.2, and 21084.3. AB 52 applies specifically to projects for which an NOP or a Notice of Intent  
39 to Adopt a Negative Declaration or MND will be filed on or after July 1, 2015. The primary intent  
40 of AB 52 was to include California Native American tribes early in the environmental review  
41 process and to establish a new category of resources related to Native Americans that require

1 consideration under CEQA, known as tribal cultural resources. Public Resources Code Section  
2 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes,  
3 sacred places, and objects with cultural value to a California Native American Tribe” that are either  
4 included or determined to be eligible for inclusion in the CRHR or included in a local register of  
5 historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency  
6 in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural  
7 Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the  
8 CEQA Guidelines, which was approved by the Office of Administrative Law on September 27,  
9 2016.

10 Public Resources Code Section 21080.3.1 requires that, within 14 days of a lead agency  
11 determining that an application for a project is complete or a decision by a public agency to  
12 undertake a project, the lead agency must provide formal notification to the designated contact or  
13 a tribal representative of California Native American tribes that are traditionally and culturally  
14 affiliated with the geographic area of the project (as defined in Public Resources Code Section  
15 21073) and who have requested in writing to be informed by the lead agency (Public Resources  
16 Code Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within  
17 30 days from receipt of the lead agency’s formal notification, and the lead agency must begin  
18 consultation within 30 days of receiving the tribe’s request for consultation (Public Resources Code  
19 Sections 21080.3.1(d) and 21080.3.1(e)).

20 Public Resources Code Section 21080.3.2(a) identifies the following as potential consultation  
21 discussion topics: the type of environmental review necessary, the significance of tribal cultural  
22 resources, the significance of the project’s impacts on the tribal cultural resources, project  
23 alternatives or appropriate measures for preservation, and mitigation measures. Consultation is  
24 considered concluded when either (1) the parties agree to measures to mitigate or avoid a significant  
25 effect, if a significant effect exists, on a tribal cultural resource, or (2) a party, acting in good faith  
26 and after reasonable effort, concludes that mutual agreement cannot be reached (Public Resources  
27 Code Section 21080.3.2(b)).

28 If a California Native American tribe has requested consultation pursuant to Public Resources Code  
29 Section 21080.3.1 and has failed to provide comments to the lead agency or otherwise failed to  
30 engage in the consultation process, or if the lead agency has complied with Public Resources Code  
31 Section 21080.3.1(d) and the California Native American tribe has failed to request consultation  
32 within 30 days, the lead agency may certify an EIR or adopt an MND (Public Resources Code  
33 Section 21082.3(d)(2) and (3)).

34 Public Resources Code Section 21082.3(c)(1) states that any information, including the location,  
35 description, and use of the tribal cultural resources, that is submitted by a California Native  
36 American tribe during the environmental review process shall not be included in the environmental  
37 document or otherwise disclosed by the lead agency or any other public agency to the public  
38 without the prior consent of the tribe that provided the information. If the lead agency publishes  
39 any information submitted by a California Native American tribe during the consultation or  
40 environmental review process, that information shall be published in a confidential appendix to the

1 environmental document unless the tribe that provided the information consents, in writing, to the  
2 disclosure of some or all of the information to the public.

### 3 **California Public Records Act**

4 The California Public Records Act protects archaeological sites from unauthorized excavation,  
5 looting, or vandalism, and explicitly authorizes public agencies to withhold information from the  
6 public related to Native American graves, cemeteries, and sacred places maintained by the NAHC.

### 7 **Health and Safety Code Sections 7050 and 7052**

8 California Health and Safety Code Sections 7050 and 7052 declare that in the event of the discovery  
9 of human remains outside of a dedicated cemetery, all ground-disturbing activities must cease and  
10 the County Coroner must be notified. Section 7052 establishes a felony penalty for mutilating,  
11 disinterring, or otherwise disturbing human remains, except by relatives.

### 12 **California Penal Code, Section 622.5**

13 California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying  
14 objects of historic or archaeological interest located on public or private lands, but specifically  
15 excludes the landowner.

### 16 **Public Resources Code, Section 5097.5**

17 Public Resources Code Section 5097.5 defines as a misdemeanor the unauthorized disturbance or  
18 removal of archaeological, historic, or paleontological resources located on public lands.

## 19 ***Local***

### 20 **Kern County General Plan**

21 The Kern County General Plan identifies goals, policies, and implementation measures for the  
22 preservation of cultural and historic resources that provide ties with the past and constitute a  
23 heritage value to residents and visitors. Further, the General Plan would develop a list of Native  
24 American organizations and individuals that would be notified of proposed discretionary projects,  
25 and the County will address those discretionary projects in accordance with CEQA. The Kern  
26 County General Plan provides goals and policies for development projects in order to reduce  
27 impacts of such projects. The policies and implementation measures in the Kern County General  
28 Plan for cultural resources that are applicable to the project are provided below. The Kern County  
29 General Plan contains additional policies, goals, and implementation measures that are more  
30 general in nature and are not specific to development such as the proposed project. Therefore, they  
31 are not listed below, but all policies, goals, and implementation measures in the Kern County  
32 General Plan are incorporated by reference.

### 33 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation** 34 **Element**

#### 35 *1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation*

#### 36 Policy

37 Policy 25: The County will promote the preservation of cultural and historic resources that  
38 provide ties with the past and constitute a heritage value to residents and visitors.

1 Implementation Measures

2 Measure K: Coordinate with the California State University, Bakersfield’s Archaeology  
3 Inventory Center.

4 Measure L: The County shall address archaeological and historical resources for  
5 discretionary projects in accordance with CEQA.

6 Measure M: In areas of known paleontological resources, the County should address the  
7 preservation of these resources where feasible.

8 Measure N: The County shall develop a list of Native American organizations and individuals  
9 who desire to be notified of proposed discretionary projects. This notification  
10 will be accomplished through the established procedures for discretionary  
11 projects and CEQA documents.

12 Measure O: On a project-specific basis, the Kern County Planning and Natural Resources  
13 Department shall evaluate the necessity for the involvement of a qualified Native  
14 American monitor for grading or other construction activities on discretionary  
15 projects that are subject to a CEQA document.

16 The West Edwards Road Settlement Specific Plan states that an archaeological survey should be  
17 performed prior to a proposed undertaking, in order to document the archaeological,  
18 paleontological, and historical resources within the project area. All surveying and reporting should  
19 be performed by a qualified archaeologist and any reports or documentation must be provided to  
20 and coordinated with the Southern San Joaquin Valley Archaeological Information Center  
21 (SSJVIC) and the Kern County Department of Planning and Community Development, prior to, or  
22 concurrent with, any General Plan Amendments, zone changes, or land division maps.

23 The Mojave Specific Plan includes objectives and policies that seek to preserve and expand  
24 historical and cultural resources and support private effects to enhance and promote historical and  
25 community resources.

26 The Willow Springs Specific Plan contains goals, policies, and implementation measures intended  
27 to protect preservation of cultural and historic resources contained on sensitive sites within the plan  
28 area.

29 **3.6.1.4 Environmental Setting**

30 The project area is situated within the Antelope Valley of the Western Mojave Desert. The Mojave  
31 Desert is characterized by a region of isolated mountain ranges, separated by desert plains; it is  
32 wedged between the Garlock Fault and the San Andreas Fault, which have uplifted the surrounding  
33 mountains relatively rapidly. This uplift resulted in an isolation of the Mojave Desert from the  
34 Pacific Coast, creating the interior drainage basins of the Western Mojave Desert, such as the  
35 Antelope Valley. On the west end, the Antelope Valley is defined by the Tehachapi and San Gabriel  
36 Mountains, which form a V-shaped basin along the western boundary of the Mojave Desert.

37 The Antelope Valley floor is composed of thick deposits of Quaternary alluvial and lacustral  
38 (lakebed) sediments. The alluvial sediments are subdivided into two units: the older or Pleistocene  
39 Quaternary sediments and the younger or Holocene alluvial surface deposits, both of which derive  
40 from nearby granitic mountains and have been deposited on the valley floor over thousands of

1 years. The project area itself contains surficial sediments of alluvium from the late Pleistocene to  
2 Holocene, ranging in age from 11,700 years ago to the present. These sediments are composed of  
3 loosely consolidated mixtures of gravel, sand, and clay and likely extend to depths of 10 feet or  
4 more beneath the surface.

### 5 **3.6.1.5 Regional Setting**

#### 6 ***Paleoenvironment and Paleontological Setting***

7 Between 12,000 and 10,000 years ago, the western United States faced environmental change on a  
8 mass scale; the glaciers began to recede; the climate dramatically became warmer and drier; and  
9 vegetation and animals began inhabiting higher elevations (ECORP, 2013).

10 Based on paleontological evidence, by the late Pleistocene, the Antelope Valley was inhabited by  
11 numerous large mammalian species (e.g., sloths, horses, bears, mammoth, bison, camels, and  
12 prong-horned antelope), large carnivorous species (e.g., saber-toothed cats, wolves, mountain lions,  
13 desert coyotes, and foxes), smaller animals (e.g., rodent, rabbits, squirrels), and a multitude of birds.  
14 The evidence also reveals that a large, fresh-water lake, Lake Thompson, covered much of the  
15 Antelope Valley 12,000 years ago. The desert vegetation began replacing the low-elevation  
16 woodlands sometime between 12,000 and 8,000 years ago and the types of plant and animal  
17 communities present in the Antelope Valley today were not established until 4,300 years ago.  
18 Approximately 8,000 years ago, Lake Thompson receded, splitting into Rosamond, Buckhorn, and  
19 Rogers Lakes (ECORP Consulting, Inc., 2013).

#### 20 ***Prehistoric Setting***

21 Since the 1980s, new archaeological research, relying upon radiocarbon dating, obsidian hydration,  
22 and flaked stone technology profiles, has refined the prehistoric chronology of human occupation  
23 in the Mojave Desert, which dates to the Pleistocene, early Holocene, middle Holocene, and the  
24 late Holocene eras. Additionally, it has been theorized that a Pre-Clovis complex, predating 12,000  
25 years before present (BP), occupied portions of the Mojave Desert, although little to no solid  
26 archaeological evidence has been documented (ECORP Consulting, Inc., 2013). The chronology  
27 has been subdivided into the following:

- 28 • The Fluted Point or Late Pleistocene Period (12,000 to 10,000 BP)
- 29 • Lake Mojave Period or Early Holocene (10,000 to 7,000 BP)
- 30 • The Pinto Period or the Early to Middle Holocene (7,000 to 4,000 BP)
- 31 • Gypsum Period (4,000 to 1450 BP)
- 32 • Saratoga Spring/Rose Spring Period or the Late Holocene (1,450 to 750 BP)
- 33 • Late Prehistoric Period or Late Holocene (950 BP to Contact, circa 180 BP)

34 **The Fluted Point or Late Pleistocene Period (12,000 to 10,000 BP):** Although Clovis (ca. 12,000  
35 to 10,000 BP) has been identified as the oldest and best identified cultural complex in the Mojave  
36 Desert, it is possible that the area had been occupied prior to 12,000 BP. Clovis is characterized by  
37 long, fluted projectile points and Great Basin Concave Base points. At least one Clovis occupation  
38 site has been recorded at China Lake, to the north of Edwards AFB; other fluted points identified

1 in the area have been recorded as isolated artifacts near China Lake and Lake Thompson. Very  
2 little information can be inferred about the people who created these types of stone tools, other than  
3 they likely lived in highly mobile, small groups, which camped near reliable sources of water during  
4 the Pleistocene/Holocene Transition and through the early Holocene (ECORP Consulting, Inc.,  
5 2013).

6 **Lake Mojave Period (Early Holocene, 10,000 to 7,000 BP):** During the early Holocene, Great  
7 Basin Stemmed (Lake Mojave and Silver Lake) projectile points, bifaces (including crescents), and  
8 unifaces were used heavily. Lake Mojave artifact assemblages also include nonlocal lithic materials  
9 and shell beads, indicating long trips for foraging, or possibly trade routes. Limited quantities of  
10 groundstone implements suggest that vegetal resources were not predominate in the diets. As with  
11 the Fluted Point Period, social groups of the Lake Mojave Period appear to have been small, highly  
12 mobile, and attracted to a variety of environments where water was available. Subsistence also  
13 included a minor reliance on small game (e.g., rabbits, hares, rodents). Lake Mojave Period artifacts  
14 have been mostly identified on the ground surface, along Rosamond Lake (Edwards AFB), ancient  
15 Lake Mojave (dry Silver and Soda Lakes), Barstow, China Lake, and Twentynine Palms (ECORP  
16 Consulting, Inc., 2013).

17 **Pinto Period (Early to Middle Holocene, 7,000 to 4,000 BP):** The Pinto Period has been defined  
18 as a response to Mid-Holocene climatic warming and desiccation in the Great Basin by about 7,000  
19 BP. It is postulated that hunter-gatherers adapted to the environmental change by seasonal  
20 migration between the desert floor and higher elevations. As the climate became gradually cooler,  
21 springs, streams, and lakes reappeared, with additional migration. Pinto Period artifact assemblages  
22 feature less diversity in lithic materials and types, although points have been identified at Pinto  
23 Basin, Little Lake, Barstow, and Twentynine Palms. A higher number of groundstone milling tools  
24 have been identified than in Lake Mojave assemblages. Additionally, the presence of Olivella shell  
25 beads in the assemblages is indicative of trade among coastal groups (ECORP Consulting, Inc.,  
26 2013).

27 Near the end of the middle Holocene, harsh climate change is believed to have resulted in very low  
28 population densities within the Mojave Desert; some locations may have faced temporary  
29 abandonment. As a result, few archaeological sites have been identified representing a time span  
30 between 5,000 and 4,000 BP (between the Pinto and Gypsum complexes).

31 **Gypsum Period (4,000 to 1,450 BP):** As the temperatures gradually warmed, it is postulated that  
32 the populations adapted more successfully to the warm and dry conditions of the Mojave Desert  
33 about 2,000 years ago. Gypsum Period artifact assemblages include corner-notched (Elko),  
34 concave-base (Humboldt), and contracting-stemmed (Gypsum) projectile points, leaf-shaped  
35 points, stone knives, flake scrapers, T-shaped drills, choppers, hammer stones, shaft smoothers,  
36 ornamental items, split-twig animal figures, and paint. Non-lithic assemblages include split-twig  
37 animal figures, rock art, shell beads, and paint. Groundstones, including manos, metates, mortars,  
38 and pestles, are found as well. Faunal materials also reveal exploitation of rabbits, hares, rodents,  
39 split-hoofed animals, hard seeds, and mesquite. Archaeological sites of this period are smaller,  
40 more numerous, and spread over a wider array of environments. By 3,000 BP, a division in

1 language groups is noted, as the Northern Uto-Aztecan peoples separated into Tubatulabalic,  
2 Hopic, Numic, and Takic language groups (ECORP Consulting, Inc., 2013).

3 **Saratoga Spring or Rose Spring Period (Late Holocene, 1,450 to 750 BP):** By the Late  
4 Holocene, the climate was warmer than in previous periods; at the beginning of the Saratoga Spring  
5 Period, the environment supported numerous springs, streams, and shallow perennial lakes in the  
6 Mojave Desert. By the end of the Saratoga Springs Period, however, the temperature began to rise  
7 with severe droughts, attributed to the decline of the Saratoga Spring complex to end around 850  
8 BP. Archaeologically, the Saratoga Spring period is characterized by projectile points indicative of  
9 bow-and-arrow technology, which suggests a rise in prehistoric population, also evidenced in the  
10 well-developed middens associated with long-term occupations. Other stone tools of this period  
11 include the Desert Side-Notched and Cottonwood points. Steatite items and shell beads are present  
12 in assemblages, suggestive of trade networks; the Saratoga Spring cultures were influenced by  
13 Hakataya and Anasazi contact, as noted by the presence of buffware, brownware, and Anasazi  
14 pottery and turquoise (ECORP Consulting, Inc., 2013).

15 **Late Prehistoric Period (Late Holocene, 950 BP to Euro-American contact):** Prior to Euro-  
16 American contact, it is believed that the prehistoric peoples in the Mojave Desert developed into  
17 separate cultural complexes during the Late Holocene. As noted in the Saratoga Springs Period,  
18 cultural influences from the Hakataya, Anasazi, and coastal tribes began to emerge, and by 3,000  
19 BP, the Numic speakers segregated into distinct language groups, such as the Southern Paiute,  
20 Chemehuevi, Shoshone, and Takic-speaking groups, such as the Serrano, etc.. In the Mojave  
21 Desert, Late Prehistoric sites included lithic scatters, temporary campsites, and large villages; the  
22 villages included cemeteries and extensive middens. Artifact assemblages include a wide array of  
23 materials such as Desert series projectile points, groundstone milling tools, incised stones and  
24 pendants, shell beads, brownware, and buffware. The assemblages include lesser quantities of  
25 obsidian than prior periods. Faunal assemblages include a varied subsistence strategy involving  
26 vegetal foods, deer, hares, rabbits, rodents, and reptiles (ECORP Consulting, Inc., 2013).

### 27 ***Ethnographic Setting***

28 Ethnographic accounts indicate that the project area was used by three groups, the Kitanemuk,  
29 Kawaiisu, and Serrano. Each of these is described in the following paragraphs.

#### 30 **Kawaiisu**

31 The Kawaiisu occupied the Piute Mountains at the southern end of the Sierra Nevada Range and  
32 the northern part of the Tehachapi Mountains, as well as portions of the valley floors. Kawaiisu  
33 economy was based on hunting and gathering, with their primary food sources including acorns,  
34 deer, bighorn sheep, rabbits, and pronghorn (ECORP Consulting, Inc., 2013).

35 Kawaiisu social structure was centered on the family. While no formal chiefs existed, certain  
36 leaders were identified, with status being achieved as opposed to being ascribed. The culture also  
37 developed complex basketry. Baskets were used to transport and store plant foods. Other food  
38 processing items include ceramics; the Kawaiisu have been identified with the production of Owens  
39 Valley Brown Ware ceramics (ECORP Consulting, Inc., 2013).

1 In terms of language, the Kawaiisu were a Numic-speaking group, in contrast to their Takic-  
2 speaking neighbors to the south, the Kitanemuk. Closer to the coast, the Tatavium and Gabrielino  
3 spoke languages of the Takic branch of the Uto-Aztecan language family. Around 3,000 years ago,  
4 Takic-speaking groups moved into coastal southern California from the Great Basin; Numic groups  
5 related to the Kawaiisu appeared to arrive in the northeastern portions of Kern County from the  
6 Great Basin by Anno Domini (AD) 1,000 or 1,200 (ECORP Consulting, Inc., 2013). Winter  
7 villages have been identified in Cache Creek Canyon northeast of the modern town of Tehachapi,  
8 and it is postulated that during the summer and fall months, some of these people occupied  
9 temporary camps at higher elevations (above 4,000 feet), where they collected acorns and pinyon  
10 nuts, processing the foods using bedrock mortars and pestles, and they occasionally used portable  
11 mortars. Kawaiisu occupations have been identified in the southern Panamint Valley and southern  
12 Death Valley, as well as southeast to Rogers Lake and the Mojave River near present-day Barstow.  
13 Stone tools used by the Kawaiisu include Desert Side-Notched arrow points as well as Rose Spring  
14 points (small corner-notched expanding-stem points) and Cottonwood Triangular arrow points.

### 15 **Kitanemuk**

16 Like other Takic-speaking groups, Kitanemuk society had a patrilineal organization. Families  
17 grouped together into villages, which were headed by a team of “administrative elite” composed of  
18 a chief, messengers, and shamans. Their primary vegetable food sources included acorns, juniper  
19 berries, seeds, and yucca buds; small game such as rabbits, squirrels, antelope and deer were also  
20 eaten. The Kitanemuk appeared to have good trade relations with most of their neighbors, including  
21 the Chumash and Tubatulabal. Social practices included burial of the dead in cemeteries, with some  
22 burials including red-colored wood as associated funerary items; cremations were also occasionally  
23 utilized for the “administrative elite” (ECORP Consulting, Inc., 2013).

24 The Kitanemuk occupied the territory extending from the Tehachapi Mountains into the western  
25 end of the Antelope Valley. During cooler seasons or at least seasonally, it is believed they migrated  
26 into the arid valley floors. During the Late Prehistoric Period, the settlements became permanent  
27 along the desert floor, with the most proximal Kitanemuk village to the APE being  
28 *Pañūqavea/Šeševyəq*, which was located near modern-day Willow Springs. There are also other  
29 Kitanemuk placenames for natural features surrounding the APE, such as Piute Ponds (*Tšəhtšavea*)  
30 and Soledad Mountain (*Paʔtqayvea*).

31 By the Mission Period (1769 to 1834), the Kitanemuk were moved to the missions of San Fernando,  
32 San Gabriel, and San Buenaventura. By the 1850s, some Kitanemuk settled at Fort Tejon and  
33 nearby Tejon Ranch - i.e., the “San Sebastian Indian Reserve,” the first attempted, and failed, Indian  
34 Reservation in the state of California, which was officially established in 1853 by Bureau of Indian  
35 Affairs Superintendent General Edward Fitzgerald Beale (ECORP Consulting, Inc., 2013).  
36 Additionally, ethnohistorical records suggest that as many 21 other Native Californian tribal groups  
37 (e.g., Chumash, Yokuts, Kawaiisu, Tübatulabal, Paiute, etc.) were relocated - either willingly or  
38 forcibly - to the San Sebastian Indian Reserve during the ten years of its existence  
39 ([www.tejonindiantribe.com](http://www.tejonindiantribe.com)).

40 While many Kitanemuk people were moved onto the Tule Reservation following the official  
41 decommissioning of the San Sebastian Indian Reserve in 1864, there were 81 Kitanemuk and other

1 Native Californians who remained on the Tejon Ranch to work as ranch hands, as documented in  
2 the 1915 “Census of the Indians of El Tejon Band in Kern County, California” conducted by Bureau  
3 of Indian Affairs agent John Terrell in 1915. These 81 people, who collectively established the  
4 historic “Tejon Canyon Rancheria,” comprise the official antecedents of the contemporary  
5 federally-recognized Tejon Indian Tribe. In other words, all contemporary Tejon Indians can trace  
6 their lineal descent from one of the 81 indigenous people documented in the 1915 Census. Given  
7 the unique history of the San Sebastian Indian Reserve, the contemporary Tejon Indian Tribe  
8 primarily identifies with its ancestral Kitanemuk language and culture, but also celebrates its  
9 polyethnic/multi-tribal heritage by engaging and collaborating with its neighboring sister tribes  
10 throughout south-central California ([www.tejonindiantribe.com](http://www.tejonindiantribe.com)).

### 11 **Serrano**

12 The Serrano occupied a territory that extends as far north as Fort Irwin, as far east/southeast as  
13 Twenty-nine Palms, as far south as Jurupa Valley and the northern reaches of Riverside, and as far  
14 west as the Antelope Valley. Serrano living along the Mojave River and in the Mojave Desert were  
15 known as the Desert Serrano. The Desert Serrano were related to and had close ties with the  
16 Mountain Serrano who inhabited the San Bernardino Mountains and surrounding areas (SMBMI  
17 CRM Department 2019). Serrano peoples were organized into clans, with the clan being the largest  
18 autonomous political entity. They lived in small villages where extended families resided in  
19 circular, dome-shaped structures made of willow frames covered with tule thatching. Each clan had  
20 one or more principal villages in addition to numerous smaller villages associated with the principal  
21 village (Price et al., 2008).

22 The Desert Serrano subsistence strategy relied on hunting and gathering, and occasionally fishing.  
23 Villages divided into smaller, mobile gathering groups during certain seasons to gather seasonally  
24 available foods. The division of labor was split between women gathering and men hunting and  
25 fishing (Bean and Smith, 1978; Warren, 1984). Mountain sheep, deer, rabbits, acorns, grass seeds,  
26 piñon nuts, bulbs, yucca roots, cacti fruit, berries, and mesquite were some of the more common  
27 resources utilized (Bean and Smith, 1978; Warren, 1984).

28 Despite early European and Spanish contact in 1771, many Serrano remained relatively  
29 autonomous until the mid- to late-1800s. However, there is indication that Serrano peoples closest  
30 to the missions of San Fernando and San Gabriel, which would include Serrano peoples in the  
31 Antelope Valley, were more heavily missionized and removed from their villages en masse  
32 between 1819-1834. (Bean and Smith, 1978; Warren, 1984; San Manuel Band of Mission Indians  
33 CRM Department 2019). Today, the San Manuel Band of Mission Indians is Serrano, while  
34 Morongo includes Serrano and Cahuilla peoples, and the Serrano Nation is comprised of Serrano  
35 peoples.

### 36 **Historic Context**

37 Among the earliest non-native visitors to the area were Spanish explorers, who arrived in the  
38 Antelope Valley in the 1770s. By 1828, both Mexican traders and American trappers led by  
39 Jedediah Smith established two routes through the area providing access from the Mojave Desert  
40 to the coast, via the Old Spanish Trail near the Cajon Pass, and the Owens Valley Road through the  
41 Tehachapi Pass. The routes were used later by Kit Carson and John C. Fremont (1844), and later

1 by survey parties searching for an alternative route for the transcontinental railroad; it would not  
2 be until 1876 that the Southern Pacific Railroad extended through the Antelope Valley and 1884  
3 the Atchison, Topeka and Santa Fe Railway traversed through Mojave. By the mid-1860s and  
4 1870s, the Antelope Valley was used extensively as an access route between Los Angeles and  
5 mining districts to the east, including mines in the Rosamond area. Rosamond, just west of the  
6 Proposed Action area, was named for one of the daughters of an official affiliated with the Southern  
7 Pacific Railroad; gold was discovered in the Rosamond Hills by the 1890s, tipping off a short-lived  
8 boom (Edwards AFB, 2010).

9 Colonization companies representing Quakers, German Lutherans, Scots, English, and others  
10 began to promote settlement of the southern Antelope Valley by the 1880s (Edwards AFB, 2010).  
11 Many of these groups sought areas to practice scientific farming and to establish utopian  
12 settlements, with initially successful economies based on agriculture and ranching. Between  
13 1880 and the early 1920s, farms in the Antelope Valley flourished, producing wheat, barley, grains,  
14 alfalfa, fruits, and nuts, along with cattle and sheep rearing. Artesian wells were drilled along the  
15 valley floor, with the 1-square-mile townsite of Lancaster being established between 1883 and  
16 1884, southwest of the project area. Additional settlers arrived by 1886 and by 1888, Lancaster  
17 boasted of a newspaper, a hotel, and multiple other businesses; the next 10 years brought the  
18 construction of a Catholic church, and a post office. Following the turn of the century, the Chamber  
19 of Commerce organized (1902), and Antelope Valley Union High School (1912), a library (1913),  
20 and the Bank of Lancaster and Farmers' Merchant Bank (1913) were constructed. In 1914, electric  
21 power was provided to several houses and streets in Lancaster. Portions of Lancaster Boulevard  
22 and Sierra Highway were paved in 1916, and with the advent of World War I, the area appeared  
23 quite prosperous (ECORP Consulting, Inc., 2013).

24 Rural areas outside of Lancaster, including the vicinity of the Proposed Action, were settled by  
25 families who purchased lands from the federal government or the railroad, or obtained land patents.  
26 Railroad parcels included odd-numbered sections, which were sold after 1903 in the project vicinity  
27 (ECORP Consulting, Inc., 2013). Lands in even-numbered sections were transferred from public  
28 domain to individual settlers under the Homestead or Desert Land Acts. Under the Homestead Act  
29 of 1862 (revised in 1912), claimants constructed a house, lived on the land, and cultivated it for 3  
30 to 5 years, and the federal government would issue a patent or deed for the land; unimproved lands  
31 reverted to government ownership. Under the Desert Land Act, a claimant could acquire an entire  
32 section (640 acres) at a cost of \$0.25 per acre and irrigate it within 3 years; later the act was revised  
33 to 320 acres/irrigation within 4 years, and the federal government would issue a patent or deed for  
34 the land; unimproved lands reverted to government ownership.

35 Between 1910 and the mid-1930s, hundreds of claims were filed for land within the Edwards AFB  
36 boundaries and the Antelope Valley. One in four claims resulted in a transfer from federal to private  
37 ownership. In 1921, the Mint Canyon Highway was completed between Lancaster and Los  
38 Angeles, reducing travel time, bringing added traffic to the area, and allowing for shipments of  
39 grains, alfalfa, and produce to be shipped to markets in Los Angeles. At this time, the Antelope  
40 Valley Hospital, courthouse, library, and Antelope Valley Junior College were constructed, and  
41 additional roads had been paved. By the 1930s, however, intermittent droughts, flooding, extreme  
42 winds, high temperatures, and the Dust Bowl—in addition to a worldwide economic depression—

1 resulted in the failure of utopian colonies and homesteads, with many residents leaving the area  
2 and a decrease in the number of homestead claims being filed (ECORP Consulting, Inc., 2013;  
3 Edwards AFB, 2010).

4 With the onset of World War II, the Antelope Valley saw economic growth due to the arrival of  
5 the military. The War Department authorized construction of the Army Air Base at Muroc Lake  
6 (the precursor to present-day Edwards AFB), which would play a strategic role in World War II,  
7 serving as the primary installation providing long-range air patrols from the Pacific Coast and  
8 training air crews for combat. The fledgling military post quickly grew from a tent city to an  
9 independent installation; likewise, the population of Lancaster jumped from 3,600 to 29,000  
10 between 1950 and 1960. The 1980s and 1990s saw increased development with the National  
11 Aeronautical Space Administration (NASA), as the first space shuttle orbiter was assembled at an  
12 aerospace plant in Palmdale and transported to Edwards AFB. Today, the installation serves as a  
13 flight test center for testing new aircraft and weaponry, with area that provides a suitable  
14 environment for testing propulsion systems and vehicles for space exploration (Edwards AFB,  
15 2010; ECORP Consulting, Inc., 2013).

## 16 3.6.2 Environmental Consequences

17 This section of the EIS/EIR describes the environmental consequences relating to cultural and  
18 paleontological resources for the Proposed Action. It describes the methods used to determine the  
19 effects of the proposed project and lists the thresholds used to conclude whether an effect would be  
20 significant.

### 21 3.6.2.1 Assessment Methods/Methodology

#### 22 **Cultural Resources**

23 To evaluate the project's potential effects on cultural resources, two Phase I cultural resources  
24 inventories of the project area were conducted, which included records searches and field surveys  
25 for the EUL Study Area and gen-tie route options. These studies are documented in detail in two  
26 reports. The first report, *Cultural Resources Inventory for the Oro Verde Solar Project, Near the*  
27 *Town of Mojave, Kern County, California, and within Management Region 1, Edwards Air Force*  
28 *Base, Phase I Report* (ECORP Consulting Inc., 2013), covers the EUL Study Area and a previous  
29 Gen-Tie Study Area. The second report, *Cultural Resources Assessment of the Gen-Tie Routes for*  
30 *the Edwards Air Force Base (AFB) Solar Project, Kern County, California* (Denniston et al., 2017),  
31 conducted an updated records search and field survey of the gen-tie route options, which had been  
32 modified since the ECORP study. A third report documents archaeological testing and significance  
33 evaluation of resources along the gen-tie route options that could be impacted by the project (Hale  
34 et al. 2018, Hale and Colston, 2019). Finally, in winter and spring 2018, ten additional sites were  
35 individually evaluated for significance by the Air Force (Red Horse 2019). Six of the ten sites were  
36 recommended eligible: EAFB-4193, -4203, -4206, -4232, -4235, and -4238. The remaining four  
37 sites were recommended not eligible: EAFB-4171, -4193, -4199, and -5205.

38 The EUL Study Area has changed shape since the original ECORP (2013) study and as a result,  
39 some resources originally identified by ECORP (2013) are no longer included in the current 6,000-  
40 acre EUL APE. Also, the APE description, above, indicates, the EUL is larger than the footprint of

1 the two alternatives (Alternative A and Alternative B) considered in this document. Additionally,  
2 the ECORP (2013) and Dudek (2017) studies of the gen-tie route options covered an optional route  
3 no longer included in the proposed project. The results of the records searches and surveys from  
4 the two project-related studies (ECORP 2013 and Hale et al. 2018) and ten site evaluations by Red  
5 Horse (2019) are summarized below for the entire project area. Following this, the number of  
6 resources present in the footprints of the Proposed Action (Alternative A, Alternative B, and the  
7 gen-tie route options) are presented.

## 8 **Records Searches**

9 Records searches and historic map reviews were conducted for the EUL Study Area and the gen-tie  
10 route options. At the time of the records search for the EUL Study Area (December 2011) (ECORP  
11 Consulting, Inc., 2013), the EUL Study Area was defined as 5,692 acres located on Edwards AFB.  
12 At the time of the records searches for the gen-tie route options (April and May 2017) (Hale et al.,  
13 2018), the options consisted of the east-west options and three north-south options (Options 1, 2,  
14 and 3). This EIS/EIR analyzes the east-west options and north-south Options 1 and 2 only.

15 Edwards AFB cultural resources staff conducted an in-house records search in December 2011 to  
16 examine site records and reports they have on file for the EUL Study Area. A records search was  
17 conducted in January 2012 at the CHRIS Southern San Joaquin Valley Information Center for a  
18 preliminary Gen-Tie Study Area and a ½-mile radius (ECORP Consulting, Inc., 2013). However,  
19 this was superseded by additional records searches at the SSJVIC in April and May 2017, covering  
20 the final gen-tie route options and a 50-foot buffer (Hale et al., 2018). The records searches included  
21 previous survey investigations, site records, historical maps, aerial photographs, land ownership  
22 records, and listings of resources in the Historic Property Data File, NRHP, CRHR, California Point  
23 of Historical Interest, California Historical Landmarks, and National Historic Landmarks. The  
24 records searches included an examination of previous cultural resources survey coverage and  
25 reports and known cultural resources within the EUL Study Area and gen-tie route options.

26 The Edwards AFB records search identified a total of 246 previously recorded cultural resources  
27 within the EUL Study Area, including 165 prehistoric and 81 historic-period archaeological sites.

28 The records searches for the gen-tie route options (East-West Options A, B, and C; and North-  
29 South Options 1 and 2) show that 29 cultural resources have been previously recorded within the  
30 records search area for the gen-tie route options, including 12 isolates (1 prehistoric and 11  
31 historic period) and 8 archaeological sites (2 prehistoric and 6 historic period), and 9 historic  
32 period built environment resources.

## 33 **Archaeological Inventory**

### 34 **Methods**

35 The records search for the EUL Study Area revealed that 3,187 acres of the 5,692-acre EUL Solar  
36 Facility Study had been previously surveyed for cultural resources within the 10 years prior to the  
37 Phase I study. These areas were not resurveyed during the Phase I cultural resources study, with  
38 the exception of four large previously recorded NRHP-eligible sites (encompassing a total of  
39 635 acres of the EUL Study Area), which were included in the total area surveyed in order to assess  
40 the sites' current conditions. A total of 2,505 acres had not been surveyed previously or had not

1 been surveyed within the past 10 years. Thus, 3,140 acres of the 5,692-acre EUL Solar Facility  
2 Study Area were surveyed during the Phase I cultural resources study, and 2,552 acres of the  
3 previously surveyed area was not resurveyed (ECORP Consulting Inc., 2013).

4 An intensive pedestrian survey was conducted between May 8 and June 29, 2012. The survey was  
5 conducted by qualified archaeologists using transects spaced no more than 15 meters apart. When  
6 an artifact or feature was identified, it was marked with a pin flag or flagging tape, and the area  
7 around it subject to more intensive, close-interval survey. An archaeological site was defined as  
8 consisting of at least three associated artifacts or a single feature. Cultural resources not meeting  
9 the site criteria were recorded as isolates. An attempt was made to relocate each previously recorded  
10 resource located within the 3,140-acre survey area; no attempt was made to relocate previously  
11 recorded resources located within the 2,552-acre previously surveyed area of the EUL Study Area.

12 Site-specific visitation was conducted by Dudek in 2018 at the request of the Air Force and in  
13 response to concerns by consulting tribes that 16 archaeological sites may have human remains.  
14 Dudek visited 16 archaeological sites (EAFB-2240, -2258, -2379, -2380, -2402, -3188, -4188, -  
15 4191, -4192, -4193, -4197, -4198, -4200, -4225, -4231, -4238) and relocated pieces of burned bone  
16 on the surface, as reported by past recordation efforts (Hale and Colston 2019). All but one piece  
17 of bone located in the field were ruled out as human (i.e., they were all identified as non-human  
18 animal remains), only one piece of bone located at EAFB-3188 could not be definitively ruled out  
19 as human, but is most likely non-human in origin.

20 The gen-tie route options were covered in two separate field surveys, and, for sake of clarity, both  
21 are summarized here. The first survey, conducted on July 3, 2012 (ECORP Consulting, Inc., 2013),  
22 covered a preliminary Gen-Tie Study Area and consisted of a reconnaissance-level survey, driven  
23 at a slow speed to document historic period built environment resources along the routes. No  
24 attempt was made to relocate all previously recorded resources, with the exception of two  
25 previously evaluated NRHP-eligible sites (CA-KER-3528H [Road Grade] and CA-KER-3459H  
26 [Los Angeles Aqueduct]). The second survey, conducted February 24, 2017 (Hale et al., 2018),  
27 consisted of an intensive pedestrian survey of North-South Options 1 and 2. Since all of the East-  
28 West options had been fully covered in recent surveys (Hale et al., 2018), a pedestrian survey was  
29 not conducted. Instead, previously documented resources along the alignment were spot-checked.  
30 The ECORP (2013) study did not include any formal resource evaluations.

### 31 Results

32 A total of 76 new archaeological sites were recorded during the field survey within the EUL Study  
33 Area (ECORP Consulting, Inc., 2013). Of these, 19 are historic-period sites and 57 are prehistoric  
34 sites. In addition, 121 previously recorded resources within the EUL Study Area were updated. Of  
35 these 121 visited resources, 37 were historic period archaeological sites and 84 were prehistoric  
36 archaeological sites. An additional 125 previously recorded resources were not updated, because  
37 they were located in the portion of the EUL Study Area that was not subject to Phase I survey in  
38 2012.

1 A total of 123 isolated finds were also recorded within the EUL Study Area. Of the 123 recorded  
2 isolates, 44 are historic period and 79 are prehistoric period. No historic period built resources  
3 (such as standing structures, buildings, or objects) were recorded within the EUL Study Area.

4 As a result of the pedestrian survey of gen-tie North-South Options 1 and 2 (Hale et al., 2018), six  
5 newly identified cultural resources were recorded, including two isolates (one prehistoric and one  
6 historic period) and four archaeological sites (two prehistoric and two historic period).

### 7 **Archaeological Testing and Evaluation**

8 Additional fieldwork was conducted at seven sites along the gen-tie route options that could be  
9 subject to impacts from the Proposed Action (Hale and Colston, 2019). The purpose was to collect  
10 data required for resources evaluation according to criteria for listing in the NRHP and CRHR.  
11 Tested sites included two prehistoric archaeological sites (SS-S-10 and SS-S-30) and five historic  
12 period refuse deposits (P-15-012716, P-15-013801, P-15-013802, SS-S-11, and SS-S-23). Field  
13 methods included a combination of surface collection of artifacts using Controlled Surface  
14 Collection units and Surface Scrape Units, and test excavation using Shovel Test Pits and  
15 Controlled Excavation Units. The evaluation study recommended that one of the resources, SS-S-  
16 10, should be found eligible for listing in the NRHP and CRHR under criteria D/4 for its  
17 archaeological data potential. However, the study also concluded that the eligible portion of the  
18 resource occurs outside the APE for the Proposed Action, and that the portion of the resource within  
19 the APE does not contain data that would contribute to its eligibility. The remaining six resources  
20 were recommended not eligible for the NRHP or CRHR.

21 At the direction of the Edwards AFB Cultural Resources Manager (CRM), Red Horse completed  
22 individual archaeological significance evaluations of 10 prehistoric archaeological sites in support  
23 of the Proposed Action. No formal report was prepared, but site forms were completed that  
24 document the evaluation efforts and results. Six of the archaeological sites are recommended  
25 eligible for NRHP/CRHR listing under Criterion D/4, respectively (EAFB-4193, -4203, -4206, -  
26 4232, -4235, -4238) and four sites are recommended not eligible (EAFB-4171, -4193, -4199, -  
27 5205). Site records documenting the evaluations are included as part of the records search in  
28 Confidential Appendix B8.

### 29 **Resources Located within the Project Area**

30 This section summarizes the cultural resources present within each of the two Proposed Action  
31 alternatives (based on ECORP Consultants, Inc., 2013), as well as within the gen-tie route options  
32 (based on Hale et al., 2018 and Hale and Colston, 2019) (see Appendices B5, B7, and B8). Because  
33 isolated artifacts generally lack archaeological context, they are considered ineligible for listing in  
34 the NRHP or CRHR and would not be considered significant cultural resources, historic properties,  
35 historical resources, or unique archaeological resources. Therefore, isolates are not included in this  
36 section, nor are they addressed further in this analysis. Resources within the two Proposed Action  
37 alternatives are tabulated by project component, site type, and eligibility status in **Table 3.6-1**.

### 38 **Alternative A EUL Study Area**

39 A total of 298 cultural resources were recorded within the Alternative A solar field project area. Of  
40 these, 215 are prehistoric archaeological sites that are included in the Bissell Basin NRHP eligible

1 prehistoric archaeological district that overlaps the Alternative A project area. The remainder (83)  
2 are historic-period resources, including nine historic homesites, 61 historic period refuse deposits  
3 (HPRDs), eight wells, and five fence lines. All but one of the homesites are eligible for listing in  
4 the NRHP. None of the HPRDs, wells, or fencelines is eligible for NRHP listing. An additional six  
5 resources are missing documentation and are not included in the site types presented above, but are  
6 presumed eligible.

#### 7 Alternative B EUL Study Area

8 A total of 73 cultural resources were recorded within the Alternative B solar field project area. Of  
9 these, 43 are prehistoric archaeological sites that are included in the Bissell Basin NRHP eligible  
10 prehistoric archaeological district. Thirty are historic period resources including two homesites, 22  
11 HPRDs, and five fencelines, none of which are eligible for NRHP listing.

#### 12 Gen-tie Route Options

13 A total of 21 cultural resources (not including isolates) have been previously recorded within or  
14 adjacent to the gen-tie route options. Of these, four are prehistoric archaeological sites, eight are  
15 historic period archaeological sites, and nine are historic period built environment resources. The  
16 following paragraphs discuss the resources according to each gen-tie route option.

17 A total of 16 cultural resources are documented within the East-West Gen-Tie route options. All  
18 three East-West route options (Options A, B, and C) contain the same resources. The resources  
19 include: two prehistoric archaeological sites (P-15-014700 – lithic scatter and P-15-014701 –  
20 quarry or prospect site); five historic period archaeological sites (P-15-012716 – borrow pit and  
21 structural remains; and P-15-017096, P-15-017097, P-15-017098, and SS-S-11 – trash scatters);  
22 and nine built environment resources (P-15-003528 – an unnamed road; P-15-003534 – an  
23 unnamed road; P-15-3537 – Oak Creek Road; P-15-003549 – Los Angeles Aqueduct; P-15-3929 –  
24 Los Angeles-Owens River Road; P-15544 – a 1934 survey marker; P-15-017305 – State Route  
25 14/Aerospace Highway; P-18681 – LADWP Owens Gorge 230kV transmission line; and P-15-  
26 002050/-003366/-000560/-017333 – A Line and associated spurs).

1  
2

**TABLE 3.6-1  
 RESOURCES WITHIN THE PROJECT AREA**

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
TBD					
	EAFB-5150	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5157	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5198	Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-6024	Contributor	A	Adverse Effect	Significant Impact
	EAFB-6025	Contributor	A	Adverse Effect	Significant Impact
	EAFB-6026	Contributor	A	Adverse Effect	Significant Impact
	EAFB-6027	Contributor	A	Adverse Effect	Significant Impact
Base Camp/Village					
	EAFB-4232	Contributor	A	Adverse Effect	Significant Impact
Flaking station					
	EAFB-0306	Not Contributor	A	No Effect	Unimpacted
	EAFB-3092	Not Contributor	A	No Effect	Unimpacted
	EAFB-4211	Not Contributor	A	No Effect	No Significant Impact
Large-dense lithic deposit					
	EAFB-0373	Not Contributor	A	Adverse Effect	Significant Impact
	EAFB-0422	Not Contributor	A	Adverse Effect	Significant Impact
	EAFB-0569	Contributor	A	Adverse Effect	Significant Impact
Large-dense temporary camp					
	EAFB-0385/3337	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0426	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2262	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-4168	Contributor	A/B	Adverse Effect	Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-4191	Contributor	A/B	Adverse Effect	Significant Impact
Large-light lithic deposit					
	EAFB-0304	Not Contributor	A	No Effect	No Significant Impact
	EAFB-0427	Not Contributor	A	No Effect	No Significant Impact
	EAFB-0428	Not Contributor	A	No Effect	No Significant Impact
	EAFB-0429	Not Contributor	A	No Effect	No Significant Impact
	EAFB-0567/3050	Not Contributor	A	No Effect	No Significant Impact
	EAFB-0570	Contributor	A	Adverse Effect	Significant Impact
	EAFB-2247	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-2250	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2251	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2252	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2255	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-2263	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2370	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2371	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-2372	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3151	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3153	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3154	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3157	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3158	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3160	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3165	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3166	Not Contributor	A	No Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-3168	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3169	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3170	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3174	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3176	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3340	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3342	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3347	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3587	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-3588	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-3592	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-3595	Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-3599	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3634	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3635	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3637	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4169	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4171	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-4172	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4175	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4182	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4186	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4187	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4190	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4195	Contributor	A	Adverse Effect	Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-4202	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4205	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4212	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4213	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4215	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4218	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4222	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4224	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5138	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5139	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5140	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5142	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5143	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5144	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5153	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5154	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5156	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5158	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5161	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5162	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5163	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5165	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5166	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5171	Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-5172	Contributor	A	Adverse Effect	Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-5173	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5174	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5176	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5178	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5180	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-5182	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5186	Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-5187	Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-5188	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5189	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5190	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5192	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5193	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5194	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5195	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5196	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5197	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5199	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5201	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5202	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5203	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5205	Not Contributor	A	No Effect	No Significant Impact
	EAFB-5206	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5207	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5209	Contributor	A	Adverse Effect	Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-5210	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5211	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5212	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5213	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5215	Contributor	A	Adverse Effect	Significant Impact
Large-light temporary camp					
	EAFB-0303	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0374	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0375/3339/4223	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0562/3049/4199/5204	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0568/4227/4229/5169	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-0571	Contributor	A	Adverse Effect	Significant Impact
	EAFB-0009/0632	Contributor	A	Adverse Effect	Significant Impact
	EAFB-1340/1342/3037	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-2240/0837	Contributor	A	Adverse Effect	Significant Impact
	EAFB-2243	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-2244	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2249	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2253	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2257/2264	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-2258	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-2259	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2261	Not Contributor	A/B	No Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-2316	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-2367	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2368	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2369	Contributor	A	Adverse Effect	Significant Impact
	EAFB-2373	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-2377	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2378	Not Contributor	A	No Effect	No Significant Impact
	EAFB-2379	Contributor	A	Adverse Effect	Significant Impact
	EAFB-2380	Contributor	A	Adverse Effect	Significant Impact
	EAFB-2381	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-2402	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3093	Not Contributor	Unimpacted	No Effect	Unimpacted
	EAFB-3116	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3152	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-3161	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3162	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-3163	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3172	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3173	Contributor	A	Adverse Effect	No Significant Impact
	EAFB-3175	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3177	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3186	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3188	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3594/4181	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-3596	Contributor	A	Adverse Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-3608	Contributor	A	Adverse Effect	Significant Impact
	EAFB-3636	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4170	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4173	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4174	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4177	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4180	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4183	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4188	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4192	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4193	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4196	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4197	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4198	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4200	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4201	Contributor	A	No Effect	No Significant Impact
	EAFB-4203	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4204	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4206	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4208	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4209	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4210	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4214	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4219	Contributor	A/B	Adverse Effect	Significant Impact <sup>4</sup>
	EAFB-4221	Contributor	A	Adverse Effect	Significant Impact <sup>4</sup>

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-4225	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4226	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4228	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4231	Contributor	A/B	Adverse Effect	Significant Impact
	EAFB-4233	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4234	Not Contributor	A	No Effect	No Significant Impact
	EAFB-4235/4240/4242	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4236	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4238	Contributor	A	Adverse Effect	Significant Impact
	EAFB-4239	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5145	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5151	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5164	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5200	Contributor	A	Adverse Effect	Significant Impact
	EAFB-5208	Contributor	A	Adverse Effect	Significant Impact
<b>Milling Station</b>					
	EAFB-2265	Contributor	A/B	Adverse Effect	No Significant Impact
	EAFB-3657	Contributor	A	Adverse Effect	Significant Impact
<b>Single feature</b>					
	EAFB-3094	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3171	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3346	Not Contributor	A	No Effect	No Significant Impact
	EAFB-4178	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-4189	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-4194	Not Contributor	A	No Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-4241	Not Contributor	A	No Effect	No Significant Impact
	EAFB-5191	Not Contributor	A	No Effect	No Significant Impact
Small-dense lithic deposit					
	EAFB-3638	Contributor	A	No Effect	No Significant Impact
Small-light lithic deposit					
	EAFB-2254	Not Contributor	A/B	No Effect	No Significant Impact
	EAFB-3338	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3341	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3343	Not Contributor	A	No Effect	No Significant Impact
	EAFB-3344	Not Contributor	A	No Effect	No Significant Impact
	EAFB-5152	Not Contributor	A	No Effect	No Significant Impact
Homesite					
	EAFB-0005	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0009/0632	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0010	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-0016	Eligible	Unimpacted	No Effect	No Significant Impact
	EAFB-0017	Eligible	Unimpacted	No Effect	No Significant Impact
	EAFB-0023	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0562/3049/4199/5204	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0837/2240/1343	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0838	Eligible	A	Adverse Effect	Significant Impact
	EAFB-0845	Eligible	A	Adverse Effect	Significant Impact
	EAFB-1346	Eligible	A/B	Adverse Effect	Significant Impact
HPRD					

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-0024	Not Eligible	A	No Effect	No Significant Impact
	EAFB-0395	Not Eligible	A	No Effect	No Significant Impact
	EAFB-0430	Not Eligible	A	No Effect	No Significant Impact
	EAFB-1038	Not Eligible	A	No Effect	No Significant Impact
	EAFB-2245	Not Eligible	A	No Effect	No Significant Impact
	EAFB-2260	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-2317	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-2382	Not Eligible	A	No Effect	No Significant Impact
	EAFB-2401	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3114/5167	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-3115	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3140	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3150	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3155	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3159	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3164	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-3167	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3187	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3530	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-3531	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-3589	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3590	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3593	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3598	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-3600	Not Eligible	Unimpacted	No Effect	Unimpacted

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-3601	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3602	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3603	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3605	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3606	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3650	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3655	Not Eligible	A	No Effect	No Significant Impact
	EAFB-4083	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-4179	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-4184	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-4185	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-4207	Not Eligible	A	No Effect	No Significant Impact
	EAFB-4216	Not Eligible	A	No Effect	No Significant Impact
	EAFB-4220	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-4230	Not Eligible	A	No Effect	No Significant Impact
	EAFB-4237	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5137	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5141	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5146	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-5147	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-5160	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5168	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-5175	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5177	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5179	Not Eligible	A	No Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-5181	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5183	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5184	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5185	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5214	Not Eligible	A	No Effect	No Significant Impact
	EAFB-6097	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-5155	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5170	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-5216	Not Eligible	A/B	No Effect	No Significant Impact
<b>Submodern HPRD</b>					
	EAFB-3622	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3623	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3624	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3625	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3626	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3628	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-3629	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3631	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3632	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3633	Not Eligible	A	No Effect	No Significant Impact
	EAFB-4176	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-4217	Not Eligible	A	No Effect	No Significant Impact
<b>Well-Isolated</b>					
	EAFB-0004	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-0836	Not Eligible	A	No Effect	No Significant Impact

<b>EAFB Site Typology</b>	<b>EAFB Number</b>	<b>NRHP Eligibility*</b>	<b>Alternative</b>	<b>Potential Effects Under NHPA</b>	<b>Potential Impacts Under CEQA</b>
	EAFB-0839	Not Eligible	Unimpacted	No Effect	Unimpacted
	EAFB-0950	Not Eligible	A	No Effect	No Significant Impact
	EAFB-1037	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-1341	Not Eligible	A	No Effect	No Significant Impact
	EAFB-1344	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-1345	Not Eligible	A/B	No Effect	No Significant Impact
	EAFB-1347	Not Eligible	A/B	No Effect	No Significant Impact
<b>Fenceline</b>					
	EAFB-3652	Not Eligible	A	No Effect	No Significant Impact
	EAFB-3653	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5148	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5149	Not Eligible	A	No Effect	No Significant Impact
	EAFB-5159	Not Eligible	A	No Effect	No Significant Impact
NOTE: *, "Contributor" and "Not Contributor" refer to the resource's contribution to the NRHP significance of the Bissell Basin Archaeological District					

1

1 One resource, P-15-003549 (Los Angeles Aqueduct), has been determined eligible for listing in the  
2 NRHP and is listed in the CRHR. Further, both P-15-003929 (Los Angeles-Owens River Road)  
3 and P-15-002050/-003366/-000560/-017333 (Atchison, Topeka and Santa Fe Railroad Line and  
4 associated spurs) are considered likely eligible for the NRHP and CRHR (Hale et al., 2018), based  
5 on previous research. Two resources within the APE for the East-West gen-tie route options (P-15-  
6 012716 and SS-S-11) were evaluated as part of the studies conducted for the Proposed Action (Hale  
7 and Colston, 2019). Both were recommended not eligible for listing in the NRHP or CRHR. None  
8 of the remaining resources within the East-West gen-tie route options has been evaluated for listing  
9 in the NRHP or CRHR or as unique archaeological resources.

10 A total of four cultural resources are documented within North-South Gen-Tie Option 1.  
11 These include: two prehistoric archaeological sites, both lithic scatters (SS-S-10 and SS-S-30); one  
12 historic period trash scatter (SS-S-23); and one built environment resource (P-15-002050/-003366/-  
13 000560/-017333 – the Atchison, Topeka, and Santa Fe Railroad and associated spurs). P-15-  
14 002050/-003366/-000560/-017333 also occurs in the East-West Gen-Tie route options. As  
15 mentioned above, P-15-002050/-003366/-000560/-017333 (Atchison, Topeka and Santa Fe  
16 Railroad Line and associated spurs) is considered likely eligible for the NRHP and CRHR (Hale et  
17 al., 2018), based on previous research. The remaining three resources were evaluated as part of the  
18 studies conducted for the Proposed Action (Hale and Colston, 2019). SS-S-23 and SS-S-30 were  
19 recommended not eligible for listing in the NRHP or CRHR. SS-S-10 was recommended eligible  
20 for listing in the NRHP and CRHR, but the study concluded that the portion of the resource within  
21 the APE does not contain significant archaeological deposits, and impacts to that portion would not  
22 constitute a significant impact.

23 A total of two resources are documented within North-South Gen-Tie Option 2. These consist of  
24 two historic period trash scatters (P-15-13801 and P-15-13802). Both were evaluated as part of the  
25 studies conducted for the Proposed Action (Hale and Colston, 2019), and both were recommended  
26 not eligible for listing in the NRHP or CRHR.

### 27 **Prehistoric Archaeological District**

28 The CRM has used its discretion as the Section 106 lead authority to determine that the prehistoric  
29 archaeological sites identified within the Proposed Action alternatives (excluding the gen-tie  
30 routes) constitute an NRHP-eligible archaeological district, the Bissell Basin Archaeological  
31 District. An archaeological district is “a grouping of sites, buildings, structures, or objects that are  
32 linked historically by function, theme, or physical development or aesthetically by plan” (National  
33 Register Bulletin 36, 1993). The prehistoric archaeological sites identified in the Proposed Action  
34 alternatives for the solar field meet the criteria to be managed as an archaeological district because  
35 they constitute a grouping of sites linked in time by the functions and themes related to aboriginal  
36 occupation of the Bissell Basin.

37 Extensive and relatively recent archaeological research has been completed in portions of the  
38 Bissell Basin region where the proposed Alternatives A and B solar fields are located. This includes  
39 research conducted for unrelated projects (Giambastiani and Basgall 2000, Giambastiani et al.  
40 2006, Giambastiani et al. 2007, and Hale et al. 2010), and project specific research (ECORP 2013,  
41 Hale and Denniston 2017, Hale and Colston 2019, and Red Horse 2019). The Air Force consulted

1 with the San Manuel Band of Mission Indians, Tejon Indian Tribe, and archaeological contractors  
2 from Red Horse and Dudek to determine which individual archaeological sites in the APE are  
3 contributors to the NRHP-eligible Bissell Basin Archaeological District. These determinations  
4 were documented by Hale and Colston (2019) for the Bissell Basin Archaeological District.

5 For archaeological values, the Bissell Basin Archaeological District is eligible for NRHP listing for  
6 its scientific value (Criterion D under the NRHP; Criterion 4 under CEQA). The Tejon Indian Tribe  
7 and San Manuel Band of Mission Indians both indicated that the archaeological values also reflect  
8 part of the values each tribe places in the District. For example, both tribal communities expressed  
9 a great desire to learn more about how their respective ancestors uniquely utilized the Bissell Basin  
10 landscape via archaeological, geomorphological and paleoenvironmental studies. As such, in this  
11 instance archaeological values do not contradict or compete with Tribal values, but rather  
12 complement them. Additionally, based on other tribal values, certain characteristics of  
13 archaeological sites contribute to the District's significance under other NRHP criteria. According  
14 to the consulting tribes, certain shell and stone beads or ornaments, and artifacts whose deposition  
15 is viewed as symbolic in nature, convey significance under Criterion A of the NRHP and Criterion  
16 1 of the CRHR relating to significant events in prehistory. Such events could have included  
17 ceremonial activities, including funerary rites and r other activities related to disposition of the  
18 dead. These same artifacts also embody special artistic and symbolic value, contributing to the  
19 District's significance under Criterion C of the NRHP and Criterion 3 of the CRHR.

## 20 **Historic Period Refuse Deposits**

21 The CRM has determined that all of the HPRDs located in the Proposed Action alternatives  
22 (excluding the gen-tie alternatives) are not eligible for NRHP listing. Enough research on HPRDs  
23 has been completed in the general vicinity of the project and across Edwards AFB as a whole that  
24 no further work is necessary at recorded HPRDs in the Proposed Action alternatives for the solar  
25 field. None of the sites contains information that would add value to historic research themes  
26 identified in the historic thematic contexts developed for the installation (Puckett and Peyton,  
27 2008).

## 28 **Correspondence with Native American Tribes (including Section 106 Government to** 29 **Government Consultation)**

30 The Air Force has corresponded with Native American Tribes and is also conducting Native  
31 American consultation efforts to satisfy NHPA and other federal requirements. The Air Force  
32 consults with Federally Recognized Tribes on a government-to-government basis in accordance  
33 with several authorities including NEPA, the NHPA, the American Indian Religious Freedom Act,  
34 and Executive Order 13007. Under Section 106 of the NHPA, the Air Force consults with Federally  
35 Recognized Tribes as part of its responsibilities to identify, evaluate, and resolve adverse effects  
36 on historic properties important to these tribal communities that may be affected by Edwards AFB's  
37 undertakings. Appendix A5 provides a list of all tribes to whom Edwards AFB provided official  
38 memoranda regarding the Proposed Action.

1 In July 2011, Edwards AFB sent letters via certified mail to the following tribal organizations:

- 2 • Big Pine Paiute Tribe of the Owens Valley
- 3 • Bishop Paiute Tribe
- 4 • Fort Mojave Indian Tribe
- 5 • Fort Mojave Indians
- 6 • Las Vegas Paiute Tribe
- 7 • Lone Pine Paiute-Shoshone Tribe
- 8 • Kern Valley Indian Council
- 9 • Kitanemuk and Yowlumne Tejon Indians
- 10 • Moapa Band of Paiute Indians
- 11 • San Fernando Band of Mission Indians
- 12 • San Manuel Band of Mission Indians
- 13 • Serrano Nation of Indians
- 14 • Tehachapi Indian Tribe
- 15 • Tejon Indian Tribe
- 16 • Timbisha Shoshone Tribe
- 17 • Tubatulabals of Kern Valley
- 18 • Tule River Tribe
- 19 • Ron Wermuth

20 On June 7, 2012, Edwards AFB sent follow-up emails to tribal organizations requesting  
21 confirmation of the receipt of the 2011 letter, to update the tribal organization regarding the current  
22 progress of the project, and to continue to invite any comments, questions, or concerns regarding  
23 the project. Email addresses could not be obtained for the San Manuel Band of Mission Indians,  
24 the Serrano Nation of Indians, or Ron Wermuth. One response was received as a result of the 2012  
25 outreach.

26 In a letter dated June 8, 2012, Dr. Donna Miranda-Begay, Tribal Chairwoman of the Tubatulabal  
27 Tribe, stated there are recorded sites near and on the proposed project sites and recommended  
28 cultural resources monitoring.

29 On October 1, 2014, Edwards AFB sent letters to the following Federally Recognized Tribes as  
30 part of its government-to-government consultation responsibilities:

- 31 • Big Pine Paiute Tribe of the Owens Valley
- 32 • Bishop Paiute Tribe
- 33 • Chemehuevi Indian Tribe

- 1 • Colorado River Indian Tribes
- 2 • Fort Independence Indian Community of Paiute Indians
- 3 • Fort Mojave Indian Tribe
- 4 • Las Vegas Paiute Tribe
- 5 • Lone Pine Paiute-Shoshone Tribe
- 6 • Moapa Band of Paiute Indians
- 7 • Morongo Band of Mission Indians
- 8 • San Manuel Band of Mission Indians
- 9 • Santa Rosa Rancheria Tachi-Yokut
- 10 • Timbisha Shoshone Tribe
- 11 • Tule River Tribe

12 The purpose of the letters was to alert the tribal organizations to the specific details of the Proposed  
13 Action and ask if any cultural resources or Traditional Cultural Properties would be affected by the  
14 proposed undertaking. As of October 22, 2014, Edwards AFB had received two responses to the  
15 2014 government-to-government consultation letters.

16 In a letter dated October 21, 2014, Robert Martin, Chairman of the Morongo Band of Mission  
17 Indians, stated the project is outside of the Tribe's current reservation boundaries but within an area  
18 that is considered a traditional use area or one in which the Tribe has cultural ties  
19 (e.g., Cahuilla/Serrano territory). Chairman Martin requested that if human remains are  
20 encountered stop-work measures be enacted and the County Coroner contacted in accordance with  
21 State Health and Safety Code 7050.5; that if Native American cultural resources are encountered,  
22 stop-work measures be enacted and a qualified archaeologist meeting the Secretary of the Interior's  
23 Standards be retained to assess the find; and that if significant Native American cultural resources  
24 are discovered and a treatment plan is required, the developer or qualified archaeologist must  
25 contact the Morongo Band of Mission Indians.

26 In addition to Native American consultation, consultation letters were sent by Edwards AFB to the  
27 California SHPO on October 7, 2014, and the ACHP on October 17, 2014, requesting comments  
28 on the delineation of the APE, appropriateness of the historic property identification efforts, and  
29 eligibility determinations.

30 In 2015 the Air Force terminated negotiation with the developer previously selected to build the  
31 project. After terminating negotiation, the Air Force completed a feasibility study for the project  
32 and, in December 2016, released a Request for Qualifications soliciting new project developers.

33 On December 14, 2016 Colin Rambo, Cultural Resource Management Technician for the Tejon  
34 Indian Tribe, requested Consulting Party Status on the project.

1 On January 5, 2017, Edwards AFB provided correspondence to the following Federally Recognized  
2 Tribes to communicate initial planning for the project had resumed:

- 3 1. Big Pine Paiute Tribe of the Owens Valley
- 4 2. Bishop Paiute Tribe
- 5 3. Chemehuevi Indian Tribe
- 6 4. Colorado River Indian Tribes (CRIT)
- 7 5. Fort Independence Paiute Indians
- 8 6. Fort Mojave Indian Tribe
- 9 7. Las Vegas Paiute Tribe
- 10 8. Lone Pine Paiute-Shoshone Tribe
- 11 9. Moapa Band of Paiutes
- 12 10. Morongo Band of Mission Indians
- 13 11. San Manuel Band of Mission Indians
- 14 12. Tachi-Yokut Tribe
- 15 13. Tejon Indian Tribe
- 16 14. Timbisha Shoshone Tribe
- 17 15. Tule River Tribe

18 On March 4, 2017 Lee Clauss, Director of the Cultural Resources Management Department of the  
19 San Manuel Band of Mission Indians, requested consultation with the Air Force on the project. A  
20 meeting was subsequently held at Edwards AFB in April 2017 to discuss the project and other  
21 matters of concern to the Tribe.

22 On November 27, 2017, the following Federally Recognized Tribes were provided the Notice of  
23 Intent to Prepare an Environmental Impact Statement and Environmental Impact Report for the  
24 Edwards Air Force Base Solar Enhanced Use Lease Project:

- 25 1. Big Pine Paiute Tribe of the Owens Valley
- 26 2. Bishop Paiute Tribe
- 27 3. Chemehuevi Indian Tribe
- 28 4. Colorado River Indian Tribes (CRIT)
- 29 5. Fort Independence Paiute Indians
- 30 6. Fort Mojave Indian Tribe
- 31 7. Las Vegas Paiute Tribe
- 32 8. Lone Pine Paiute-Shoshone Tribe
- 33 9. Moapa Band of Paiutes
- 34 10. Morongo Band of Mission Indians

- 1 11. San Manuel Band of Mission Indians
- 2 12. Santa Rosa Rancheria Tachi-Yokut Tribe
- 3 13. Tejon Indian Tribe
- 4 14. Timbisha Shoshone Tribe
- 5 15. Tule River Tribe

6 In a letter dated January 2, 2018, Lee Clauss, Director of the Cultural Resources Management  
7 Department of the San Manuel Band of Mission Indians requested continued consultation with  
8 Edwards AFB and the County of Kern on matters of great archaeological sensitivity and on their  
9 cultural-resources-based concerns.

10 On March 27, 2018, Edwards AFB hosted a government-to-government consultation meeting to  
11 discuss project engagement and to support information exchange. During this meeting,  
12 representatives from the San Manuel Band of Mission Indians and Tejon Indian Tribe indicated  
13 their preference for an archaeological district approach to resources management to capture the  
14 themes that link together the prehistoric sites, and to enter into a Memorandum of Agreement  
15 with the Air Force regarding the treatment of archaeological resources. The meeting included the  
16 following participants:

- 17 1. Lee Clauss – San Manuel Band of Mission Indians
- 18 2. Jessica Mauck – San Manuel Band of Mission Indians
- 19 3. Tommy Gonzales – Tejon Indian Tribe
- 20 4. Colin Rambo – Tejon Indian Tribe
- 21 5. Andrea Brewer-Anderson – U.S. Department of the Air Force
- 22 6. Cliff Knesel – U.S. Department of the Air Force
- 23 7. Tom Rademacher – U.S. Department of the Air Force
- 24 8. Joe Thomas – U.S. Department of the Air Force
- 25 9. Martin Briseno – U.S. Department of the Air Force
- 26 10. Leslie Brown – U.S. Department of the Air Force
- 27 11. Patricia Rodriguez – U. S. Department of the Air Force
- 28 12. Terrance Smalls – County of Kern
- 29 13. Janice Mayes – County of Kern
- 30 14. Taylor Shoene – County of Kern
- 31 15. Simon Day – Terra-Gen, LLC
- 32 16. Bernadette Jendrusch – Terra-Gen, LLC
- 33 17. Jessica Porter-Rodriguez – Redhorse, LLC

1 On April 24, 2018, a tribal consultation meeting was held at Edwards AFB to discuss  
2 identification and evaluation efforts for cultural resources, to gain information on resources  
3 important to tribes, and to conduct visitation of certain resources. While representatives from the  
4 Tejon Indian Tribe were present, representatives from the San Manuel Band of Mission Indians  
5 could not attend the meeting, so a subsequent field visit was arranged. That meeting included the  
6 following participants:

- 7 1. Tom Rademacher – U.S. Department of the Air Force
- 8 2. Cliff Knesel – U.S. Department of the Air Force
- 9 3. Andrea Brewer-Anderson – U.S. Department of the Air Force
- 10 4. Colin Rambo – Tejon Indian Tribe
- 11 5. Tommy Gonzales – Tejon Indian Tribe
- 12 6. Jessica Porter-Rodriguez – Redhorse Corporation
- 13 7. Jeffrey Baker – Redhorse Corporation
- 14 8. Simon Day – Terra-Gen, LLC
- 15 9. Bernadette Jendrusch – Terra-Gen, LLC
- 16 10. Micah Hale – Dudek
- 17 11. Randall Cates – Kern County Planning and Natural Resources Department
- 18 12. Taylor Schoene – Kern County Planning and Natural Resources Department
- 19 13. Jay Scott Wolf – Dudek

20 A field visit with representatives from the San Manuel Band of Mission Indians was held on June  
21 11, 2018. The field visit was attended by the following representatives:

- 22 1. Tom Rademacher – U.S. Department of the Air Force
- 23 2. Cliff Knesel – U.S. Department of the Air Force
- 24 3. Andrea Brewer-Anderson – U.S. Department of the Air Force
- 25 4. Lee Clauss – San Manuel Band of Mission Indians
- 26 5. Jessica Mauck – San Manuel Band of Mission Indians
- 27 6. Colin Rambo – Tejon Indian Tribe
- 28 7. Jessica Porter-Rodriguez – Redhorse Corporation
- 29 8. Jeffrey Baker – Redhorse Corporation
- 30 9. Bernadette Jendrusch – Terra-Gen, LLC
- 31 10. Jay Scott Wolf – Dudek
- 32 11. Randall Cates – Kern County Planning and Natural Resources Department
- 33 12. Taylor Schoene – Kern County Planning and Natural Resources Department

1 On October 23, 2018, a working consultation meeting was held at Edwards AFB. During the  
2 meeting specific sites were considered and prioritized for further evaluation. The meeting was  
3 attended by the following representatives:

- 4 1. Lee Clauss – San Manuel Band of Mission Indians
- 5 2. Jessica Mauck – San Manuel Band of Mission Indians
- 6 3. Colin Rambo – Tejon Indian Tribe
- 7 4. Simon Day – Terra-Gen, LLC
- 8 5. Bernadette Jendrusch – Terra-Gen, LLC
- 9 6. Gary Stuebben – U.S. Department of the Air Force
- 10 7. Debra Felder – U.S. Department of the Air Force
- 11 8. Martin Briseno – U.S. Department of the Air Force
- 12 9. Micah Hale – Dudek
- 13 10. Jessica Porter-Rodriguez – RedHorse
- 14 11. Jeffery Baker – RedHorse
- 15 12. James Papin – U.S. Department of the Air Force
- 16 13. Cliff Knesel – U.S. Department of the Air Force
- 17 14. Andrea Brewer-Anderson – U.S. Department of the Air Force
- 18 15. Thomas Rademacher – U.S. Department of the Air Force

### 19 **Native American AB 52 Consultation**

20 The consultation conducted by the County under AB 52 pertains to the CEQA component of the  
21 project, and specifically the gen-tie route options. On November 27, 2017, the County mailed  
22 AB 52 consultation notification letters to Native American groups and individuals identified on the  
23 County’s AB 52 consultation list. The contact list included four tribal representatives from three  
24 tribes: Torres Martinez Desert Cahuilla Indians, San Manuel Band of Mission Indians, and Twenty-  
25 Nine Palms Band of Mission Indians. The notification letter provided details on the project, a map  
26 of the project site, and an invitation to consult.

27 On December 13, 2017, Ms. Jessica Mauck, Cultural Resources Analyst with the San Manuel Band  
28 of Missions Indians, responded by email stating that the project lies within Serrano ancestral  
29 territory and is therefore of interest to the Tribe. The email also notes that the San Manuel Band of  
30 Mission Indians is already consulting with Edwards AFB for the portion of the project within the  
31 base, and therefore also elects to consult under CEQA with the County. The Tribe requested copies  
32 of the cultural resources technical reports for the gen-tie route options for review. On December  
33 18, 2017, the County submitted the gen-tie route options cultural resources report (Dudek, 2017)  
34 to the Tribe.

35 On January 18, 2018, Mr. Anthony Madrigal, Jr., Tribal Historic Preservation Officer (THPO) with  
36 the Twenty-Nine Palms Band of Mission Indians, replied by letter stating that while the THPO is  
37 not aware of any resources within the project area that pertain to the Twenty-Nine Palms Band of

1 Mission Indians, the project may have the potential to significantly impact resources of concern to  
2 the Tribe. The Tribe further requested that they be allowed to review the cultural resources technical  
3 reports for the project, and be informed of the distribution of the EIS/EIR. The County submitted  
4 the cultural resources technical reports to the tribe on January 30, 2018.

5 Further consultation efforts between the County and the San Manuel Band of Mission Indians and  
6 the Tejon Indian Tribe, conducted in coordination with Edwards AFB's consultation under Section  
7 106, are described in the preceding section, *Native American and Section 106 Consultation*. These  
8 efforts included meetings hosted by Edwards AFB on March 27, 2018, and April 24, 2018, and a  
9 field visit on June 11, 2018, all of which included the participation of County representatives.

### 10 ***Paleontological Resources***

11 A paleontological records check and geologic map review for the project area was performed  
12 through the LACM (McLeod, 2014; Appendix B6). A project-specific paleontological locality  
13 search was conducted through LACM and included a review of geological and paleontological  
14 records for the project area and any known paleontological resources recovered from the  
15 surrounding area, as well as the geologic units that would likely be encountered during excavation  
16 activities associated with the project. The locality search from the LACM records did not identify  
17 any vertebrate fossil localities within the project boundaries, but it did identify localities from  
18 sedimentary deposits nearby that appear similar to those occurring within the project area. Along  
19 the southeastern portion of the project area, in the elevated terrain of the Bissell Hills, there are  
20 bedrock exposures of plutonic igneous rocks that will not contain any recognizable fossils. Smaller  
21 exposures of plutonic igneous rocks are noted in elevated terrain around Standard Hill (near the  
22 middle of the project area) and closer to Highway 14/Antelope Valley Freeway. Generally, these  
23 areas contain exposures of early to middle Miocene Gem Hill Formation, which is described as “a  
24 coarse rock unit composed of igneous rock fragments” and is considered unlikely to contain  
25 significant vertebrate fossils (McLeod, 2014).

26 The closest vertebrate fossil locality was identified as LACM 7891, recorded in Quaternary  
27 deposits to the southwest of the western portion of the project area between the Tehachapi  
28 Mountains and the Rosamond Hills, in a location north of Willow Springs, near the California  
29 Aqueduct. This locality produced fossil specimens of camel (*Hemiauchenia*). Vertebrate fossil  
30 locality LACM 3722 is situated to the west-northwest of the western portion of the project area.  
31 This fossil horse (*Equus*) was identified in Quaternary localities during the excavation of sewer  
32 lines within the city of Tehachapi. Vertebrate fossil locality LACM 7853 is situated south of the  
33 project site and north-northeast of Lancaster. This locality produced fossil specimens of western  
34 whiptail lizard (*Aspidocelis tigris*), desert iguana (*Dipsosaurus dorsalis*), alligator lizard (*Elgaria*),  
35 desert spiny lizard (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*), desert night  
36 lizard (*Xantusia vigilis*), skink (*Plestiodon* sp.), coachwhip or whip snake (*Masticophis*), leaf-nosed  
37 snake (*Phyllorhynchus* sp.), western lyre snake (*Trimorphodon biscutatus*), wood rat (*Neotoma*  
38 sp.), field or deer mouse (*Peromyscus* sp.), pocket gopher (*Thomomys bottae*), kangaroo rat  
39 (*Dipodomys* sp.), pocket mouse (*Perognathus* sp.), Audubon's cottontail rabbit (*Sylvilagus*  
40 *audubonii*), and antelope ground squirrel (*Ammospermophilus leucurus*). All of these animals are  
41 contemporaneous with modern species and are likely from Holocene sediments. Further south of  
42 the project area, but north of Lancaster, is vertebrate fossil locality LACM 7884. This location

1 produced a fossil specimen of camel (*Camelops hesternus*), which is from Pleistocene sediments  
2 and is older than 11,700 years.

3 Much of the project area features surficial deposits of Quaternary alluvium derived from the  
4 Tehachapi Mountains to the northwest of the Proposed Action location. The uppermost layers of  
5 these alluvial fan deposits are unlikely to contain significant vertebrate fossils, although there is a  
6 potential for these remains in the finer-grained dune sands. As a result, surface grading or shallow  
7 excavation in the younger Quaternary alluvium that underlies the project area is unlikely to uncover  
8 significant vertebrate fossils. Deeper excavations that extend down into older deposits, however,  
9 may encounter significant vertebrate fossil remains (McLeod, 2014).

### 10 **3.6.2.2 Determination of Impacts/Thresholds of Significance**

11 This effects analysis assesses potential effects on cultural, tribal cultural, and paleontological  
12 resources, and human remains, that could occur as a result of implementation of the Proposed  
13 Action. This analysis evaluates the effects of constructing and operating a photovoltaic generating  
14 facility on the project site, as well as the proposed gen-tie line routes.

15 The effects and mitigation measures identified in this section address types of activities that could  
16 significantly affect cultural resources. The Proposed Action could include elements such as ground  
17 disturbance, grading, placement of pipe pile foundations, and placement of footings, that have the  
18 ability to damage or create the loss of cultural resources and paleontological resources. Ground-  
19 disturbing construction activities associated with the development of the Proposed Action or  
20 alternatives could have a direct effect on cultural resources, historic properties, historical resources,  
21 and unique archaeological resources by damaging and displacing artifacts, diminishing site  
22 integrity and altering the characteristics that make the resources significant.

23 Indirect effects are caused by the action and are later in time or farther removed in distance. Indirect  
24 effects to historical and unique archaeological resources could include visual, auditory, and  
25 atmospheric effects. For significant cultural resources—including built environment,  
26 archaeological, and tribal resources—for which setting, feeling and association are aspects of  
27 integrity that are critical to conveying their historical significance, indirect effects could include  
28 alteration of those characteristics of such resources that convey their historical significance. Indirect  
29 effects to resources may also result from increased erosion due to site clearance and preparation, or  
30 from inadvertent damage or outright vandalism to exposed resource components due to improved  
31 accessibility.

32 Effects on paleontological resources occur when there is a loss of resources directly or a loss of a  
33 unique geologic feature associated with paleontological resources.

34 For this analysis, an environmental effect to cultural and paleontological resources would be  
35 considered significant if it would result in any of the effects listed below. These effects are based  
36 on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and  
37 standards of professional practice.

1 **NEPA**

2 Under NEPA, in determining whether a federal action “significantly” affects the quality of the human  
3 environment, federal lead agencies consider the unique characteristics of the affected geographic area,  
4 such as proximity to “historic or cultural resources, park lands, prime farmlands, wetlands, wild and  
5 scenic rivers, and ecologically critical areas” (40 CFR Section 1508.27(b)(3)), or the degree to which  
6 the action may adversely affect “districts, sites, highways, structures, or objects listed in or eligible  
7 for listing in the National Register of Historic Places” or may cause loss or destruction of “significant  
8 scientific, cultural, or historical resources” (40 CFR Section 1508.27(b)(8)).

9 Cultural resources need not be determined eligible for the National Register to receive  
10 consideration under NEPA. NEPA requires consideration of effects to both National Register-  
11 eligible resources and to “cultural resources” more broadly (40 CFR Section 1508.27(b)(3); 40  
12 CFR Section 1508.27(b)(8)).

13 As indicated by Section 3.0.4, the following criteria were used to determine the context and  
14 intensity of effects under NEPA:

- 15 1. The complete scope of the undertaking, including the location and amount of ground-  
16 disturbing activities, and their potential for affecting known or unknown cultural resources,  
17 or areas of importance to Native American or other traditional communities.
- 18 2. The presence of or potential for cultural resources within the Proposed Action.
- 19 3. The degree to which the action may adversely affect districts, sites, highways, structures,  
20 or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of  
21 significant scientific, cultural, or historical resources.
- 22 4. Options for the mitigation of the adverse effects to known significant cultural resources or  
23 paleontological resources.
- 24 5. The potential for inadvertent discoveries or inadvertent destruction of resources through  
25 the course of the project (including construction, operation, maintenance, and  
26 decommissioning).

27 **CEQA**

28 The Kern County CEQA Implementation Document and Kern County Environmental Checklist  
29 identify the following criteria, as established in Appendix G of the CEQA Guidelines, to determine  
30 if a project could potentially have a significant adverse effect on cultural resources or tribal cultural  
31 resources:

- 32 • Cause a substantial adverse change in the significance of a historical resource, pursuant to  
33 Section 15064.4.
- 34 • Cause a substantial adverse change in the significance of an archaeological resource pursuant  
35 to Section 15064.4.
- 36 • Cause a substantial adverse change in the significance of an archaeological resource pursuant  
37 to CEQA Guidelines Section 15064.4.
- 38 • Disturb any human remains, including those interred outside of formal cemeteries

- 1 • Cause a substantial adverse change in the significance of a tribal cultural resource, defined in  
2 Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is  
3 geographically defined in terms of the size and scope of the landscape, sacred place, or object  
4 with cultural value to a California Native American tribe, and that is either of the following:
  - 5 a) Listed or eligible for listing in the California Register of Historical Resources, or in a  
6 local register of historical resources as defined in Public Resources Code Section  
7 5020.1(k); or
  - 8 b) A resource determined by the lead agency, in its discretion and supported by  
9 substantial evidence, to be significant pursuant to criteria set forth in subdivision (c)  
10 of Public Resources Code Section 5024.1. In applying the criteria set forth in  
11 subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall  
12 consider the significance of the resource to a California Native American tribe.

13 According to CEQA Guidelines Section 5064.5(b), a project with an effect that may cause a  
14 substantial adverse change in the significance of a historical resource is a project that may have a  
15 significant effect on the environment. The guidelines further state that a substantial adverse change  
16 in the significance of a resource means the physical demolition, destruction, relocation, or alteration  
17 of the resource or its immediate surroundings such that the significance of a historic resource would  
18 be materially impaired. Actions that would materially impair the significance of a historical  
19 resource are any actions that would demolish or adversely alter those physical characteristics of a  
20 historical resource that convey its historical significance and qualify it for inclusion in the CRHR  
21 or in a local register or survey that meet the requirements of Public Resources Code Sections  
22 5020.1(k) and 5024.1(g).

23 Finally, CEQA Guidelines Section 15125.4(b)(3) requires consideration of avoidance of impacts  
24 to significant or unique archaeological sites through one of the following: (1) avoidance,  
25 (2) incorporation into a park or greenspace, (3) capping with chemically stable soil before covering  
26 over with hardscape, or (4) deeding into a conservation easement.

### 27 3.6.3 Analysis of Environmental Effects

#### 28 3.6.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

29 This discussion of Alternative A is specific to the construction, operation, and decommissioning of the  
30 solar arrays and related components that would be constructed within the EUL Study Area as well as  
31 the gen-tie line associated with Alternative A. Mitigation measures identified here are presented in  
32 Section 3.6.5, *Mitigation Measures*. The Alternative A APE is 4,700 acres, within which 4,000 acres  
33 can be developed. The additional 700 acres was included to identify areas for solar development while  
34 simultaneously allowing for avoidance of significant cultural resources.

#### 35 **NEPA: Environmental Impacts**

##### 36 **Construction**

##### 37 **Cultural Resources**

38 Construction of a solar array within the EUL Study Area under Alternative A would require  
39 clearing and grading of a maximum of 4,000 acres of mostly undisturbed land on Edwards AFB.  
40 Approximately 150 acres of disturbed and undisturbed lands would be graded or otherwise

1 disturbed for construction of the gen-tie line. This grading could directly affect known cultural  
2 resources within the project area by damaging or displacing artifacts and features, resulting in a loss  
3 of information about history and prehistory in the area. Construction of Alternative A also has the  
4 potential for indirect effects to known cultural resources, including effects created by erosion, dust,  
5 and surface runoff. These effects would be considered significant if erosion, dust, or surface runoff  
6 creates an unstable ground surface that would undermine or displace cultural materials or otherwise  
7 damage the cultural resources.

8 The Alternative A site was designed to avoid several significant archaeological resources located  
9 along the western and northern installation boundaries and within the overall EUL area. The  
10 following summary of cultural resources includes those that are in or intersected by the Alternative  
11 A site (APE), and excludes those that are completely avoided. A total of 298 cultural resources  
12 were recorded within the Alternative A site area. Of these, 215 are prehistoric archaeological sites  
13 that are included in the Bissell Basin NRHP eligible prehistoric archaeological district that overlaps  
14 the Alternative A project area. The remainder (83) are historic-period resources, including nine  
15 historic homesites, 61 HPRDs, eight wells, five fence lines, and six resources that lack  
16 documentation and do not fit into the site typology. Eight of the homesites are eligible for listing  
17 in the NRHP, as are the undocumented resources. None of the HPRDs, wells, or fence lines is  
18 eligible for NRHP listing. The Air Force has initiated formal consultation with the California  
19 SHPO; however, the consultation is currently ongoing.

20 The Bissell Basin Archaeological District is eligible for NRHP listing under Criterion A, C, and D,  
21 and for the CRHR under criteria 1, 3, and 4 for both archaeological and tribal values, which as  
22 previously denoted are not mutually exclusive.

23 A total of 16 cultural resources are documented within the East-West Gen-Tie route options. All  
24 three East-West route options (Options A, B, and C) contain the same resources. The resources  
25 include: two prehistoric archaeological sites (P-15-014700 – lithic scatter, and P-15-014701 –  
26 quarry or prospect site); five historic period archaeological sites (P-15-012716 – borrow pit and  
27 structural remains; and P-15-017096, P-15-017097, P-15-017098, and SS-S-11 – trash scatters);  
28 and nine built environment resources (P-15-003528 – an unnamed road; P-15-003534 – an  
29 unnamed road; P-15-3537 – Oak Creek Road; P-15-003549 – Los Angeles Aqueduct; P-15-3929 –  
30 Los Angeles-Owens River Road; P-15544 – a 1934 survey marker; P-15-017305 – State Route  
31 14/Aerospace Highway; P-15-018681 – LADWP Owens Gorge 230kV transmission line; and P-  
32 15-002050/-003366/-000560/-017333 – Atchison, Topeka and Santa Fe Railroad Line and  
33 associated spurs). One resource, P-15-003549, has been determined eligible for listing in the NRHP  
34 and is listed in the CRHR. Two resources, P-15-003929 and P-15-002050/-003366/-000560/-  
35 017333, are considered likely eligible for the NRHP and CRHR and are assumed eligible for  
36 purposes of the Proposed Action. An additional two resources, P-15-012716 and SS-S-11, have  
37 been recommended not eligible for listing in the NRHP or CRHR. The remaining 11 resources have  
38 not been evaluated for listing in the NRHP or CRHR or as unique archaeological resources, and so  
39 are assumed to be significant resources for purposes of the Proposed Action.

40 Of these 14 determined, recommended, or assumed eligible resources, eight are linear historic  
41 period features, including an aqueduct (P-15-003549), a transmission-line (P-15-018681), a

1 railroad (P-15-002050/-003366/-000560/-017333), and five roads or highways (P-15-003929, P-  
2 15-003528, P-15-003534, P-15-003537, and P-15-017305). These resources cross the APE, but  
3 construction of the transmission towers for the gen-tie line would avoid the resources themselves,  
4 and the transmission line would span the resources. As such, they would not be impacted by the  
5 Proposed Action. The six remaining resources include two prehistoric archaeological sites, three  
6 historic period trash scatters, and one survey marker. While these resources occur within the APE,  
7 flexibility in the siting of the transmission line towers can avoid direct impacts to the resources.  
8 That said, because these determined, recommended, or assumed eligible resources occur within the  
9 APE, implementation of any of the East-West Gen-Tie options has the potential to impact cultural  
10 resources.

11 A total of four cultural resources are documented within North-South Gen-Tie Option 1. These  
12 include: two prehistoric lithic scatters (SS-S-10 and SS-S-30); one historic period trash scatter (SS-  
13 S-23); and one built environment resource (P-15-002050/-003366/-000560/-017333 – the  
14 Atchison, Topeka and Santa Fe Railroad and associated spurs). SS-S-23 and SS-S-30 have been  
15 recommended not eligible for listing in the NRHP or CRHR, and impacts to the resources would  
16 not be considered significant. Based on testing and evaluation, SS-S-10 was recommended eligible  
17 for listing in the NRHP and CRHR, but the portion of the resource within the APE was found to  
18 not contain significant archaeological deposits that contribute to the eligibility of the resource. As  
19 such, impacts to the portion of the resource within the APE would not be a significant impact.  
20 Finally, P-15-002050/-003366/-000560/-017333, which also occurs within the APE for the East-  
21 West route options, is considered likely eligible for the NRHP and CRHR and is assumed eligible  
22 for purposes of the Proposed Action. P-15-002050/-003366/-000560/-017333 is a linear historic  
23 period resource that crosses the APE and can be avoided by the proposed gen-tie line. As such,  
24 impacts to the resource can be avoided. That said, because two recommended or assumed eligible  
25 resources occur within the APE, without appropriate avoidance measures implementation of North-  
26 South Gen-Tie Option 1 has the potential to impact cultural resources,

27 A total of two resources are documented within North-South Gen-Tie Option 2, both of which are  
28 historic period trash scatters (P-15-13801 and P-15-13802). Both have been recommended not  
29 eligible for listing in the NRHP or CRHR. As such, implementation of North-South Gen-Tie Option  
30 2 would not have an impact on cultural resources.

31 Given the results of this analysis, Alternative A has the potential to adversely affect cultural  
32 resources both within the solar facility and along the proposed gen-tie routes, including resources  
33 eligible for the NRHP and CRHR. If Alternative A is approved, the following would occur:

- 34 • The project would have an adverse effect on the Bissell Basin Archaeological District  
35 where impacts occur to individual archaeological sites that are considered to be  
36 contributors to the District's NRHP significance under Criterion A, C, and D for  
37 archaeological and tribal values. Impacts to individual prehistoric archaeological sites that  
38 are not contributors to Bissell Basin Archaeological District would not constitute an  
39 adverse effect.
- 40 • The project would have an adverse effect on all NRHP-eligible historic-period  
41 archaeological sites that cannot be avoided.

- Individual HPRDs, wells, and fence lines are categorically considered not significant and not eligible for NRHP listing; implementation of Alternative A would not have an adverse effect on these resources.

Regarding the gen-tie route options, the Proposed Action would, with appropriate resource avoidance measures, avoid adverse effects to known cultural resources that qualify as historic properties.

In addition to known cultural resources, ground-disturbing activities associated with the project could have an effect on unknown buried cultural resources, which could be a significant effect. The Antelope Valley floor is covered in thick deposits of Quaternary alluvial sediments, derived from nearby granitic mountains and deposited on the valley floor over the course of thousands of years. The younger Quaternary valley alluvial deposits, composed of weathered soil material and poorly sorted clay, silt, and sand, may be up to several hundred feet thick in valley areas, and thinner on slopes at the valley margins. The precise thickness of the younger alluvial deposits within the project area is unknown.

Given that these portions of the Antelope Valley within which the project would be located have been covered with Holocene alluvial deposits, which have been deposited over the course of known human occupation in the region, there is a possibility that the deposition of alluvium has buried prehistoric archaeological sites that once existed on the surface. In fact, Giambastiani and Basgall (2000) document buried archaeological deposits within the EUL. Therefore, there is a moderate probability that buried archaeological deposits may be encountered during project-related excavation.

The provided mitigation to resolve adverse effects to the Bissell Basin Archaeological District is designed to address both archaeological and tribal values where those values intersect under Criterion D of the NRHP and Criterion 4 of the CRHR. Additional mitigation is provided to resolve adverse effects to tribal values primarily under Criterion A and C of the NRHP and Criterion 1 and 3 of the CRHR.

Mitigation measures MM 3.6-1a through MM 3.6-7a would mitigate adverse effects under Criterion D of the NRHP to the Bissell Basin Archaeological District where effects to contributing elements cannot be avoided. Implementation of MM 3.6-1a, Memorandum of Agreement (MOA) between the CRM, consulting tribes, and the California SHPO will further specify details of all mitigation measures. The MOA will require implementation of a historic properties treatment plan (HPTP) that will identify avoidance measures and appropriate levels of data recovery (MM 3.6-2a) for individually impacted and contributing archaeological sites that cannot be avoided. The MOA will identify the APE and restate processes for resolving adverse effects to historic properties for both archaeological and tribal values, and processes required for modifications to the APE. The HPTP will summarize themes that define the Bissell Basin Archaeological District, highlighting known research themes and avenues for additional inquiry, and data recovery methods that can be scaled to manage the range of archaeological deposits that exist in the APE. Beyond basic fieldwork, methods to be specified in the HPTP include analysis of existing collections from archaeological sites in the EUL, special studies such as chronometric analyses (i.e., radiocarbon, obsidian hydration), paleoethnobotanical analyses, pollen, starch grain, and protein residue

1 analyses, and paleoenvironmental investigations. The HPTP will include guidance for  
2 recommendations for additional work that may be required (including monitoring during  
3 construction (MM 3.6-3a), and the proper treatment of inadvertent discoveries and human remains  
4 (MM 3.6-4a). The HPTP will also reference existing thematic studies for historical periods of  
5 significance, and summarize those themes important to historic period NRHP-eligible sites located  
6 within each Alternative. The HPTP will discuss the conveyance of tribal values through the material  
7 remains identified at contributing elements to the Bissell Basin Archaeological District, and  
8 describe in detail the mitigation required to resolve adverse effects to contributing elements that  
9 cannot be avoided. Implementation of a worker environmental awareness training program  
10 (WEAP) (MM 3.6-5a) will ensure that all project personnel are trained in the proper treatment of  
11 cultural resources, cultural sensitivities regarding archaeological material, laws and regulations,  
12 and project-specific treatment measures. Mitigation through public outreach and education (MM  
13 3.6-6a) and relocation of cultural material from some impacted sites where appropriate (MM 3.6-  
14 7a) will resolve adverse effects to tribal values of the Bissell Basin Archaeological District.

15 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
16 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
17 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
18 MM 3.6-7a (relocation of cultural material) would mitigate adverse effects to historic properties  
19 under Section 106 criteria A, C and D, and CEQA criteria 1, 3 and 4 for both Alternatives.  
20 Additionally, implementation of MM 3.6-1b through 3.6-8b, further described below, would ensure  
21 that both known and unknown resources that could be discovered during construction of the gen-  
22 tie line are properly treated and significant impacts mitigated. No cultural resources have been  
23 identified as significant under Section 106 Criteria B, or CEQA Criteria 2. Therefore, none of the  
24 identified resources would be affected in such a way that the provided mitigation would be  
25 insufficient to resolve project-related effects.

### 26 Paleontological Resources

27 Potential significant effects to paleontological resources include, but are not limited to, being  
28 directly affected and destroyed by construction equipment and project-related vehicles, exposure  
29 of alluvium during construction that may subject the rocks to increased weathering and erosion,  
30 unauthorized collection of fossils by project personnel (as well as amateur and commercial  
31 collectors who would have greater access to the area), and vandalism.

32 Construction activities in younger Quaternary alluvium deposits, which have little potential to yield  
33 significant paleontological resources, would not be expected to affect unique paleontological  
34 resources or unique geologic features. There is a low potential for encountering unique  
35 paleontological resources within the project site during ground-disturbing construction activities  
36 such as grubbing, grading, and excavation. However, deeper excavations (greater than 10 feet) that  
37 extend down into older deposits may encounter significant vertebrate fossil remains. Depths of the  
38 Proposed Action range from 2 to 8 feet, based on placement of pipe pile foundations and footings.  
39 As such, it is not anticipated that project-related excavation would encounter these deeper deposits.

40 Implementation of Mitigation Measures MM 3.6-5b (Paleontological Resources Mitigation and  
41 Monitoring Plan), MM 3.6-6b (worker paleontological resources environmental awareness training

1 program), MM 3.6-7b (paleontological resources monitoring), and MM 3.6-8b (paleontological  
2 resources discoveries) would minimize effects to paleontological resources.

### 3 **Operation and Maintenance**

#### 4 **Cultural Resources**

5 Once the project is constructed, it is unlikely that any additional direct loss or disturbance to known  
6 cultural resources would occur during routine operation and maintenance of Alternative A.  
7 However, the increase in vehicle traffic associated with operation and maintenance at the site would  
8 result in additional personnel accessing the solar facility and gen-tie route. There is the potential  
9 that personnel operating equipment at or making routine visits to the solar facility or gen-tie route,  
10 may collect artifact materials from the ground surface, which would have an adverse effect on  
11 cultural resources. These effects could be considered significant if continued over long periods of  
12 time. Implementation of MM 3.6-1a through MM 3.6-7a and MM 3.6-11a for the solar facility  
13 portion of the project, as well as implementation of MM 3.6-1b through 3.6-4b and MM 3.6-8b for  
14 the gen-tie portion of the project, would minimize these effects.

#### 15 **Paleontological Resources**

16 Because such activities would not involve subsurface excavation, routine operations and  
17 maintenance of the solar facility and gen-tie are not expected to result in a disturbance or loss of  
18 paleontological resources. No mitigation is required.

### 19 **Decommissioning**

#### 20 **Cultural Resources**

21 At the time the solar facility and gen-tie lines are decommissioned in approximately 35 years, the  
22 project area could be converted to other uses or it could be revegetated to a natural state. As a result,  
23 new direct effects could occur to known or unknown cultural resources as a result of ground  
24 disturbance. However, implementation of Mitigation Measures MM 3.6-1a through MM 3.6-7a, as  
25 well as implementation of MM 3.6-1b through MM 3.6-4b and MM 3.6-8b for the gen-tie portion  
26 of the project, would minimize these effects.

#### 27 **Paleontological Resources**

28 Similar to the discussion for cultural resources, decommissioning of the solar facility and gen-tie  
29 line could result in new effects to paleontological resources as a result of ground disturbance.  
30 However, implementation of Mitigation Measures MM 3.6-8a through MM 3.6-10a for the solar  
31 facility portion of the project and Mitigation Measures MM 3.6-5b through MM 3.6-7b for the gen-  
32 tie portion of the project, would minimize these effects.

### 33 **CEQA: Impact Significance Determination**

#### 34 **Impact 3.6-1: The project would cause a substantial adverse change in the significance of a** 35 **historical or unique archaeological resource.**

36 As discussed in detail under the NEPA Environmental Effects, the construction, operation and  
37 maintenance, and decommissioning of Alternative A would result in direct impacts to known  
38 cultural resources. Many of these impacts would be significant prior to mitigation.

1 A total of 298 cultural resources were recorded within the Alternative A site plan area. Of these,  
2 215 are prehistoric archaeological sites that are included in the Bissell Basin NRHP eligible  
3 prehistoric archaeological district that overlaps the Alternative A project area. The remainder (83)  
4 are historic-period resources, including 9 historic homesites, 49 HPRDs, 12 submodern refuse  
5 deposits, 8 wells and 5 fence lines. Eight of the homesites are eligible for listing in the NRHP  
6 (one was formally evaluated; seven are treated as eligible based on existing information) and one  
7 is not eligible. None of the HPRDs (including submodern), wells, or fence lines is eligible for  
8 NRHP or CRHR listing.

9 The Bissell Basin Archaeological District is eligible for NRHP listing under Criterion A, C, and D,  
10 and for the CRHR under criteria 1, 3, and 4 for both archaeological and tribal values.

11 As described previously, a total of 16 cultural resources are documented within the East-West Gen-  
12 Tie route options; 14 of them have been determined, recommended, or are assumed eligible for  
13 listing in the NRHP and CRHR. All three East-West route options (Options A, B, and C) contain  
14 the same resources.

15 A total of four cultural resources are documented within North-South Gen-Tie Option 1. One,  
16 which also occurs along the East-West gen-tie route options, is assumed eligible for listing in the  
17 NRHP and CRHR. Another has been recommended eligible, but the portion of the resources within  
18 the APE does not contribute to the eligibility of the resource. The remaining two resources have  
19 been recommended not eligible.

20 A total of two resources are documented within North-South Gen-Tie Option 2, but both have been  
21 recommended not eligible for the NRHP or CRHR.

22 Of the resources determined, recommended, or assumed eligible for the CRHR, eight are linear  
23 historic period features that cross the APE. Construction of the transmission towers for the gen-tie  
24 line would avoid the resources themselves, and the transmission line would span the resources. As  
25 such, they would not be impacted by the Proposed Action. Five additional resources occur within  
26 the APE, but flexibility in the siting of the transmission line towers can avoid direct impacts to the  
27 resources. A final resource occurs within the APE, but it has been determined that the portion within  
28 the APE does not contribute to the eligibility of the site, and so any impacts from the Proposed  
29 Action on the portion of the resource within the APE would not constitute a significant impact.

30 As discussed above, without mitigation, Alternative A has the potential to impact historical  
31 resources and unique archaeological resources. Further, Alternative A has the potential to impact  
32 unknown buried archaeological resources. As described previously, implementation of Mitigation  
33 Measures MM 3.6-1b (retention of a qualified archaeologist), MM 3.6-2b (worker environmental  
34 awareness program, MM 3.6-3b (archaeological and Native American monitoring), and MM 3.6-  
35 4b (treatment of inadvertent discoveries) for the gen-tie portion of the project, as well as Mitigation  
36 Measures MM 3.6-1a through 3.6-7a, as described above, for the solar facility portion of the  
37 project, would reduce impacts to archaeological and other cultural resources that qualify as  
38 historical resources to less than significant.

1 **Mitigation Measures**

2 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
3 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
4 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
5 MM 3.6-7a (relocation of cultural material) would mitigate adverse effects to historic properties  
6 under CEQA criteria 1, 3 and 4 for both solar field Alternatives. Additionally, implementation of  
7 MM 3.6-1b through 3.6-4b, and MM 3.6-8b would ensure that both known and unknown resources  
8 that could be discovered during construction of the gen-tie line are properly treated and significant  
9 impacts mitigated. No cultural resources have been identified as significant under Section 106  
10 Criteria B, or CEQA Criteria 2. Therefore, none of the identified resources would be affected in  
11 such a way that the provided mitigation would be insufficient to resolve project-related effects.

12 **Level of Significance after Mitigation**

13 Impacts to historical and unique archaeological resources would be less than significant.

14 **Impact 3.6-2: The project would directly or indirectly destroy a unique paleontological**  
15 **resource or site or unique geologic feature.**

16 As discussed under the NEPA Environmental Effects, the development of Alternative A has a low  
17 potential for encountering unique paleontological resources within the project site during ground-  
18 disturbing construction activities, although the deeper excavation has a higher potential to  
19 encounter paleontological resources.

20 **Mitigation Measures**

21 Implementation of Mitigation Measures MM 3.6-5b (Paleontological Resources Mitigation and  
22 Monitoring Plan), MM 3.6-6b (worker paleontological environmental awareness program), MM  
23 3.6-7b (paleontological resources monitoring and treatment of discoveries) for the gen-tie portion  
24 of the project, as well as Mitigation Measures MM 3.6-1a through MM 3.6-7a for the solar facility  
25 portion of the project, would reduce impacts to resources to a level below significance under  
26 CEQA.

27 **Level of Significance after Mitigation**

28 Impacts would be less than significant.

29 **Impact 3.6-3: The project would disturb human remains, including those interred outside of**  
30 **formal cemeteries.**

31 Previous and current archaeological research in the EUL has identified archaeological materials,  
32 such as beads, steatite pendants, and other ornaments, as well as indeterminate burned bone, that  
33 suggest the project area has been used for human burial purposes in the past. These materials  
34 indicate that there is the possibility of impacting Native American human remains through project  
35 implementation where avoidance is not feasible, or inadvertently during construction. In the event  
36 that known human remains are impacted, or inadvertently discovered during project construction  
37 activities, the human remains and/or the location of their deposition could be damaged, which could  
38 be a significant impact.

1 **Mitigation Measures**

2 Implement Mitigation Measure MM 3.6-4a for the solar facility portion of the project and  
3 Mitigation Measure MM 3.6-8b for the gen-tie portion of the project (discovery of human remains)  
4 (see Section 3.6.5 for mitigation measures).

5 **Level of Significance after Mitigation**

6 Impacts would be less than significant.

7 **Impact 3.16-1a: The project would cause a substantial adverse change in the significance of**  
8 **a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site,**  
9 **feature, place, cultural landscape that is geographically defined in terms of the size and scope**  
10 **of the landscape, sacred place, or object with cultural value to a California Native American**  
11 **tribe that is listed or eligible for listing in the CRHR, or in a local register of historical**  
12 **resources defined in Public Resources Code Section 5020.1(k).**

13 The County's government-to-government consultation efforts with interested Native American  
14 groups conducted pursuant to AB 52 is ongoing, and formal recognition of tribal cultural resources  
15 (TCRs) by the County has yet to be completed. However, during federal tribal consultation, the  
16 Tejon Indian Tribe and San Manuel Band of Mission Indians identified the Bissell Basin  
17 Archaeological District as a tribal cultural resource under CEQA significance criteria 1, 3, and 4,  
18 for tribal values that also intersect with archaeological values. No TCRs have been identified within  
19 the gen-tie line APE, although there remains the possibility of discovering TCRs during gen-tie  
20 construction. Therefore, the project site would cause a substantial adverse change in the  
21 significance of a tribal cultural resource.

22 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
23 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
24 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
25 MM 3.6-7a (relocation of cultural material) would mitigate significant impacts to TCRs in the  
26 project site under CEQA criteria 1, 3 and 4 for both solar field Alternatives. Additionally,  
27 implementation of MM 3.6-1b through 3.6-4b, and MM 3.6-8b would ensure that both known and  
28 unknown resources that could be discovered during construction of the gen-tie line are properly  
29 treated and significant impacts mitigated. No tribal cultural resources have been identified as  
30 significant under CEQA Criteria 2. Therefore, no tribal cultural resources would be affected in such  
31 a way that the provided mitigation would be insufficient to resolve project-related effects to tribal  
32 cultural resources.

33 **Mitigation Measures**

34 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
35 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
36 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
37 MM 3.6-7a (relocation of cultural material) for the solar facility portion of the project, and  
38 implementation of MM 3.6-1b through 3.6-4b, and MM 3.6-8b for the gen-tie portion of the project.

39 **Level of Significance**

40 Impacts would be less than significant with mitigation.

1 **Impact 3.16-1b: The project would cause a substantial adverse change in the significance of**  
2 **a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site,**  
3 **feature, place, cultural landscape that is geographically defined in terms of the size and scope**  
4 **of the landscape, sacred place, or object with cultural value to a California Native American**  
5 **tribe that is a resource determined by the lead agency, in its discretion and supported by**  
6 **substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public**  
7 **Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public**  
8 **Resources Code Section 5024.1, the lead agency shall consider the significance of the resource**  
9 **to a California Native American tribe.**

10 As noted above, the County’s government-to-government consultation efforts with interested  
11 Native American groups conducted pursuant to AB 52 is ongoing and formal recognition of TCRs  
12 by the County has yet to be completed. However, during federal tribal consultation, the Tejon  
13 Indian Tribe and San Manuel Band of Mission Indians identified the Bissell Basin Archaeological  
14 District as a tribal cultural resource under CEQA significance criteria 1, 3, and 4, for tribal values  
15 that also intersect with archaeological values. No TCRs have been identified within the gen-tie line  
16 APE, although there remains the possibility of discovering TCRs during gen-tie construction.  
17 Therefore, to the project site, would cause a substantial adverse change in the significance of a  
18 tribal cultural resource.

19 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
20 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
21 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
22 MM 3.6-7a (relocation of cultural material) would mitigate significant impacts to TCRs in the  
23 project site under CEQA criteria 1, 3 and 4 for both solar field Alternatives. Additionally,  
24 implementation of MM 3.6-1b through 3.6-4b, and MM 3.6-8b would ensure that both known and  
25 unknown resources that could be discovered during construction of the gen-tie line are properly  
26 treated and significant impacts mitigated. No tribal cultural resources have been identified as  
27 significant under CEQA Criteria 2. Therefore, no tribal cultural resources would be affected in such  
28 a way that the provided mitigation would be insufficient to resolve project-related effects to tribal  
29 cultural resources.

### 30 **Mitigation Measures**

31 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
32 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
33 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
34 MM 3.6-7a (relocation of cultural material) for the solar facility portion of the project, and  
35 implementation of MM 3.6-1b through 3.6-4b, and MM 3.6-8b for the gen-tie portion of the project.

### 36 **Level of Significance**

37 Less than significant with mitigation.

38

### 3.6.3.2 Alternative B: 1,500-Acre EUL

#### *NEPA: Environmental Impacts*

#### **Construction**

#### Cultural Resources

The proposed Alternative B would involve grading of approximately 1,500 acres of mostly undisturbed land. Alternative B would utilize the same gen-tie line route described in Alternative A. Approximately 150 acres of disturbed and undisturbed lands would be graded or otherwise disturbed for construction of the gen-tie line. Together, Alternative B would result in a direct effect on approximately 1,650 acres of ground disturbance. Ground disturbance could directly affect known cultural resources within the project area by damaging or displacing artifacts and features, resulting in a loss of information about history and prehistory in the area. Construction of Alternative B also has the potential for indirect effects to known cultural resources, including effects created by erosion, dust, and surface runoff. These effects would be considered significant if erosion, dust, or surface runoff creates an unstable ground surface that would undermine or displace cultural materials or otherwise damage the cultural resources.

As with Alternative A, the proposed Alternative B site was designed to avoid several significant archaeological resources located along the western and northern installation boundaries, and within the overall EUL area. Some of the resources avoided include historic-period homesites and large prehistoric habitation sites. The following summary of cultural resources includes those that are in or intersected by the Alternative B site (APE), and excludes those that are completely avoided.

A total of 73 cultural resources were recorded within the Alternative B solar field project area. Of these, 43 are prehistoric archaeological sites that are included in the Bissell Basin NRHP-eligible prehistoric archaeological district, and 30 are historic period resources (HPRDs, wells, or fencelines), none of which is eligible for NRHP listing.

As described previously, a total of 16 cultural resources are documented within the East-West Gen-Tie route options; 14 of them have been determined, recommended, or are assumed eligible for listing in the NRHP and CRHR. All three East-West route options (Options A, B, and C) contain the same resources.

A total of four cultural resources are documented within North-South Gen-Tie Option 1. One, which also occurs along the East-West gen-tie route options, is assumed eligible for listing in the NRHP and CRHR. Another has been recommended eligible, but the portion of the resources within the APE does not contribute to the eligibility of the resource. The remaining two resources have been recommended not eligible.

A total of two resources are documented within North-South Gen-Tie Option 2, but both have been recommended not eligible for the NRHP or CRHR.

Of the resources determined, recommended, or assumed eligible for the CRHR, eight are linear historic period features that cross the APE. Construction of the transmission towers for the gen-tie line would avoid the resources themselves, and the transmission line would span the resources. As

1 such, they would not be impacted by the Proposed Action. Five additional resources occur within  
2 the APE, but flexibility in the siting of the transmission line towers can avoid direct impacts to the  
3 resources. A final resource occurs within the APE, but it has been determined that the portion within  
4 the APE does not contribute to the eligibility of the site, and so any impacts from the Proposed  
5 Action on the portion of the resource within the APE would not constitute a significant impact.

6 Given the results of this analysis, Alternative B has the potential to adversely affect cultural  
7 resources both within the solar facility and along the proposed gen-tie routes, including resources  
8 eligible for the NRHP and CRHR.

9 If Alternative B is approved:

- 10 • The project would have an adverse effect on the Bissell Basin Archaeological District  
11 where impacts occur to individual archaeological sites that are considered to be  
12 contributors to the District's NRHP significance under Criterion A, C, and D for  
13 archaeological and tribal values. Impacts to individual prehistoric archaeological sites that  
14 are not contributors to the Bissell Basin Archaeological District would not constitute an  
15 adverse effect.

16 Both eligible homesites will be avoided; therefore, implementation of Alternative B will not have  
17 an adverse effect on these resources.

- 18 • Individual HPRDs and fence lines are categorically considered not significant and not  
19 eligible for NRHP listing by the CRM; implementation of Alternative B would not have  
20 an adverse effect on these resources.

21 The provided mitigation to resolve adverse effects to the Bissell Basin Archaeological District is  
22 designed to address both archaeological and tribal values where those values intersect under  
23 Criterion D of the NRHP and Criterion 4 of the CRHR. Additional mitigation is provided to resolve  
24 adverse effects to tribal values primarily under Criterion A and C of the NRHP and Criterion 1 and  
25 3 of the CRHR.

26 Mitigation measures MM 3.6-1a through MM 3.6-7a would mitigate adverse effects under  
27 Criterion D of the NRHP to the Bissell Basin Archaeological District where effects to contributing  
28 elements cannot be avoided. Implementation of MM 3.6-1a, Memorandum of Agreement (MOA)  
29 between the CRM, consulting tribes, and the California SHPO will further specify details of all  
30 mitigation measures. The MOA will require implementation of a historic properties treatment plan  
31 (HPTP) that will identify avoidance measures and appropriate levels of data recovery (MM 3.6-2a)  
32 for individually impacted and contributing archaeological sites that cannot be avoided. The MOA  
33 will identify the APE and restate processes for resolving adverse effects to historic properties for  
34 both archaeological and tribal values, and processes required for modifications to the APE. The  
35 HPTP will summarize themes that define the Bissell Basin Archaeological District, highlighting  
36 known research themes and avenues for additional inquiry, and data recovery methods that can be  
37 scaled to manage the range of archaeological deposits that exist in the APE. Beyond basic  
38 fieldwork, methods to be specified in the HPTP include analysis of existing collections from  
39 archaeological sites in the EUL, special studies such as chronometric analyses (i.e., radiocarbon,  
40 obsidian hydration), paleoethnobotanical analyses, pollen, starch grain, and protein residue

1 analyses, and paleoenvironmental investigations. The HPTP will include guidance for  
2 recommendations for additional work that may be required (including monitoring during  
3 construction (MM 3.6-3a), and the proper treatment of inadvertent discoveries and human remains  
4 (MM 3.6-4a). The HPTP will also reference existing thematic studies for historical periods of  
5 significance, and summarize those themes important to historic period NRHP-eligible sites located  
6 within each Alternative. The HPTP will discuss the conveyance of tribal values through the material  
7 remains identified at contributing elements to the Bissell Basin Archaeological District, and  
8 describe in detail the mitigation required to resolve adverse effects to contributing elements that  
9 cannot be avoided. Implementation of a WEAP (MM 3.6-5a) will ensure that all project personnel  
10 are trained in the proper treatment of cultural resources, cultural sensitivities regarding  
11 archaeological material, laws and regulations, and project-specific treatment measures. Mitigation  
12 through public outreach and education (MM 3.6-6a) and relocation of cultural material from some  
13 impacted sites where appropriate (MM 3.6-7a) will resolve adverse effects to tribal values of the  
14 Bissell Basin Archaeological District.

15 Implementation of MM 3.6-1a (MOA and HPTP), MM 3.6-2a (data recovery), MM 3.6-3a  
16 (archaeological and tribal monitoring), MM 3.6-4a (treatment of inadvertent discoveries), MM 3.6-  
17 5a (worker environmental awareness program), MM 3.6-6a (public outreach and education), and  
18 MM 3.6-7a (relocation of cultural material) would mitigate adverse effects to historic properties  
19 under Section 106 criteria A, C and D, and CEQA criteria 1, 3 and 4 for both Alternatives.  
20 Additionally, implementation of MM 3.6-1b through 3.6-4b, and MM 3.6-8b, further described  
21 below, would ensure that both known and unknown resources that could be discovered during  
22 construction of the gen-tie line are properly treated and significant impacts mitigated. No cultural  
23 resources have been identified as significant under Section 106 Criteria B, or CEQA Criteria 2.  
24 Therefore, none of the identified resources would be affected in such a way that the provided  
25 mitigation would be insufficient to resolve project-related effects.

## 26 Paleontological Resources

27 Potential adverse effects to paleontological resources would be similar to those identified for  
28 Alternative A and include, but are not limited to, being directly affected and destroyed by  
29 construction equipment and project-related vehicles, exposure of alluvium during construction that  
30 may subject the rocks to increased weathering and erosion, unauthorized collection of fossils by  
31 project personnel (as well as amateur and commercial collectors who would have greater access to  
32 the area), and vandalism. Construction activities in younger Quaternary alluvium deposits, which  
33 have little potential to yield significant paleontological resources, would not be expected to affect  
34 unique paleontological resources or unique geologic features. However, deeper excavations  
35 (greater than 10 feet) that extend down into older deposits may encounter significant vertebrate  
36 fossil remains. Depths of the Proposed Action range from 2 to 8 feet, based on placement of pipe  
37 pile foundations and footings. As such, it is not anticipated that project-related excavation would  
38 encounter these deeper deposits.

39 Implementation of Mitigation Measures MM 3.6-8a (Paleontological Resources Mitigation and  
40 Monitoring Plan, including resource treatment), MM 3.6-9a (worker paleontological resources  
41 environmental awareness training program), and MM 3.6-10a (paleontological resources  
42 monitoring and resource) would minimize effects to paleontological resources due to construction

1 of the solar facility. Additionally, implementation of Mitigation Measures MM 3.6-5b through MM  
2 3.6-7b, further described above, would ensure that effects to paleontological resources due to  
3 construction of the gen-tie lines, would be minimized.

#### 4 **Operation and Maintenance**

##### 5 Cultural Resources

6 Once the project is constructed, it is unlikely that any additional direct loss or disturbance to known  
7 cultural resources would occur during routine operation and maintenance of Alternative B.  
8 However, the increase in vehicle traffic associated with operation and maintenance at the site would  
9 result in additional personnel accessing the solar facility and gen-tie route. There is the potential  
10 that personnel operating equipment at or making routine visits to the solar facility or gen-tie route,  
11 may collect artifact materials from the ground surface, which would have an adverse effect on  
12 cultural resources. These effects could be considered significant if continued over long periods of  
13 time.

14 Implementation of MM 3.6-1a through MM 3.6-7a for the solar facility portion of the project, as  
15 well as implementation of MM 3.6-1b through 3.6-4b and MM 3.6-8b for the gen-tie portion of the  
16 project, would minimize these effects.

##### 17 Paleontological Resources

18 Routine operations and maintenance at the solar facility or along the gen-tie route are not expected  
19 to result in a disturbance or loss of paleontological resources. No mitigation is required.

#### 20 **Decommissioning**

##### 21 Cultural Resources

22 At the time the solar facility and gen-tie line are decommissioned in approximately 35 years or so,  
23 the project area could be converted to other uses or it could be revegetated to a natural state.  
24 Removal of equipment and ground preparation for revegetation may result in new direct effects to  
25 known or unknown cultural resources. However, implementation of Mitigation Measures MM 3.6-  
26 8a through MM 3.6-10a for the solar facility portion of the project and Mitigation Measures MM  
27 3.6-5b through 3.6-7b for the gen-tie portion of the project, would minimize these effects. would  
28 minimize these effects.

##### 29 Paleontological Resources

30 Similar to the discussion for cultural resources, decommissioning of the solar facility and gen-tie  
31 line could result in new effects to paleontological resources as a result of ground disturbance.  
32 However, implementation of MM 3.6-8a through MM 3.6-10a for the solar facility portion of the  
33 project and Mitigation Measures MM 3.6-5b through 3.6-7b for the gen-tie portion of the project,  
34 would minimize these effects. would minimize these effects.

#### 35 **CEQA: Impact Significance Determination**

36 As discussed in detail under the NEPA Environmental Effects, the development of Alternative B  
37 would result in potentially significant direct impacts to known cultural resources, including  
38 historical resource, unique archaeological resources, and human remains. Because Alternative B  
39 would result in approximately one-third the physical development of Alternative A, this alternative

1 would result in reduced impacts to cultural resources compared to Alternative A. The potential  
2 impacts along the proposed gen-tie route options would be the same between the two alternatives.  
3 However, because construction and operation of the facility would remain the same as in  
4 Alternative A, the significance conclusions for the impacts identified for each phase of Alternative  
5 B (construction, operation and maintenance, decommissioning) would be the same as described  
6 above for Alternative A.

7 As discussed previously, a total of 73 cultural resources were recorded within the Alternative B  
8 solar field project area. Of these, 43 are prehistoric archaeological sites that are included in the  
9 Bissell Basin NRHP-eligible prehistoric archaeological district, and 30 are HPRDs, wells, or  
10 fencelines, none of which is eligible for NRHP or CRHR listing.

11 The gen-tie route options for Alternative B are the same as for Alternative A, as discussed above.  
12 Without mitigation, Alternative B has the potential to impact historical resources and unique  
13 archaeological resources. As discussed under the NEPA Environmental Effects, the development  
14 of Alternative B has a low potential for encountering unique paleontological resources within the  
15 project site during ground-disturbing construction activities, although the deeper excavation has a  
16 higher potential to encounter paleontological resources. Finally, no tribal cultural resources were  
17 identified through consultation conducted pursuant to AB 52.

#### 18 **Mitigation Measures**

19 Implementation of Mitigation Measures MM 3.6-1a through 3.6-10a for the solar facility portion  
20 of the project and MM 3.6-1b through MM 3.6-8b for the gen-tie portion of the project, would  
21 reduce impacts to resources to a level below significance under CEQA.

#### 22 **Level of Significance after Mitigation**

23 Impacts to historical resources would be less than significant. Impacts to paleontological resources  
24 and human remains would be less than significant. There would be no impacts to tribal cultural  
25 resources.

### 26 **3.6.3.3 Alternative C: No Action/No Project**

#### 27 ***NEPA: Environmental Impacts***

28 Under this alternative, none of the components proposed under Alternative A or Alternative B  
29 would be built. If Alternative C were implemented, there would be no changes to onsite conditions  
30 or existing cultural or paleontological resources. No mitigation is required.

#### 31 ***CEQA: Impact Significance Determination***

32 Alternative C would result in no impacts to cultural or paleontological resources at the project site.

#### 33 **Mitigation Measures**

34 No mitigation measures are required.

## 3.6.4 Cumulative Impact Analysis

Cumulative effects on cultural resources take into account the Proposed Action's effects as well as those likely to occur as a result of other existing, proposed, and reasonably foreseeable projects. When analyzing cumulative effects on cultural resources, an assessment is made of the effects on individual resources as well as the inventory of cultural resources within the cumulative effect analysis area.

### 3.6.4.1 NEPA: Cumulative Environmental Effects and Their Significance

The geographic area of analysis for cultural resources includes the western Antelope Valley, which is in the western tip of the Mojave Desert. The Antelope Valley includes portions of the southeast corner of Kern County and portions of northern Los Angeles County. 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 of analysis is appropriate because the archaeological, historical, and paleontological resources within this radius are expected to be similar to those that occur on the project site because of their proximity, and because similar environments, landforms, and hydrology would likely result in similar land uses and, thus, site types. Similar geology in this area would likely yield fossils of similar sensitivity and quantity. This is a large enough area to encompass any effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect cultural and paleontological resources during construction, or as a result of operation and maintenance, or closure and decommissioning activities.

As described in Chapter 3.0, multiple projects, including solar and wind energy projects, are proposed throughout Kern County and northern Los Angeles County. Many are located in the western Antelope Valley. Cumulative effects to cultural resources in this area could occur if other existing or proposed projects, in conjunction with the project, had or would have effects on cultural resources that, when considered together, would be significant.

The western Antelope Valley contains a significant archaeological and historical record that, in many cases, has not been well documented or recorded. In addition, much of the land in this area has been historically altered by human activities that have both deposited and degraded cultural resources. Cumulatively, there is potential for ongoing and future development projects in the vicinity to disturb landscapes that may contain known or unknown cultural resources. Thus, the potential construction effects of the Proposed Action, in combination with other large acreage projects (e.g., those in excess of 2,000 acres), including Antelope Valley Solar (#1), Beacon Solar (#2), Fremont Valley Preservation (#4), RE Astoria (#8), Alta East (#37), Alta Infill II (#38), Alta-Oak Creek (#39), Avalon Wind (#40), Catalina (#4444), Golden Queen Mining (#45), Pacific Wind (#49), and 2PdV Wind Energy (#50) in Eastern Kern County, could contribute to a cumulatively significant effect on cultural resources.

Mitigation measures are included in this EIS/EIR to reduce potentially significant effects to cultural resources prior to and during construction, operation and maintenance, and decommissioning of this project. However, the Proposed Action by itself would have a less-than-significant effect to cultural resources with incorporation of Mitigation Measures MM 3.6-1a through MM 3.6-7a for the solar facility portion of the project, as well as implementation of MM 3.6-1b through 3.6-4b

1 and MM 3.6-8b for the gen-tie portion of the project. Therefore, with the implementation of these  
2 Mitigation Measures, the Proposed Action would not have a cumulatively considerable  
3 contribution to cumulative effects to cultural resources.

4 Excavation and ground disturbing activities associated with the project in conjunction with other  
5 projects in the area could contribute to the progressive loss of fossil remains, associated geological  
6 and geographic data, and fossil bearing strata, which is a potentially significant effect. However,  
7 the Proposed Action by itself would have a less-than-significant effect to paleontological resources  
8 with incorporation of Mitigation Measures MM 3.6-8a through MM 3.6-10a for the solar facility  
9 portion of the project and Mitigation Measures MM 3.6-5b through 3.6-7b for the gen-tie portion  
10 of the project. Therefore, with the implementation of these Mitigation Measures, the Proposed  
11 Action would not have a cumulatively considerable contribution to cumulative effects to  
12 paleontological resources.

### 13 **3.6.4.2 CEQA: Cumulative Impact Significance Determination**

14 As discussed above in the NEPA cumulative effects analysis, the western Antelope Valley  
15 contains a significant archaeological and historical record that, in many cases, has not been well  
16 documented or recorded. Thus, there is potential for ongoing and future development projects in  
17 the vicinity to disturb landscapes that may contain known or unknown cultural resources. Potential  
18 impacts of the project to cultural resources, in combination with other projects in the area, could  
19 contribute to a cumulatively significant impact due to the overall loss of historical and  
20 archaeological artifacts unique to the region. However, mitigation measures are included in this  
21 EIR/EIS to reduce potentially significant project impacts to cultural resources during construction  
22 of the proposed project. Therefore, with implementation of MM 3.6-1a through MM 3.6-7a for the  
23 solar facility portion of the project, as well as implementation of MM 3.6-1b through 3.6-4b for the  
24 gen-tie portion of the project, the project would not have a cumulatively considerable contribution  
25 to impacts to unique archaeological or historical resources. Cumulative impacts to paleontological  
26 resources and human remains would be less than significant with implementation of Mitigation  
27 Measures MM 3.6-8a through 3.6-10a for the solar facility portion of the project, and Mitigation  
28 Measures MM 3.6-5b through MM 3.6-8b for the gen-tie portion of the project. Since no tribal  
29 cultural resources were identified, the project would not have a cumulatively considerable  
30 contribution to impacts to such resources.

#### 31 **Mitigation Measures**

32 Implement Mitigation Measures MM 3.6-1a through 3.6-10a for the solar facility portion of the  
33 project and Mitigation Measures MM 3.6-1b through MM 3.6-8b for the gen-tie portion of the  
34 project (see Section 3.6.5 for mitigation measures).

#### 35 **Level of Significance after Mitigation**

36 Impacts would be less than significant.

37

## 3.6.5 Mitigation Measures

Adverse effects to historic properties under Section 106 of the NHPA and significant impacts to historical resources under CEQA resulting from the Proposed Action would be resolved through the following mitigation measures that include data recovery of impacted archaeological sites and compliance with the terms of an MOA to be developed under Section 106 of the NHPA between the Air Force, consulting tribes, and the State Historic Preservation Office.

### 3.6.5.1 Solar Facility Mitigation Measures

**MM 3.6-1a: Consultation Agreement and Cultural Resources Management Plan.** The Cultural Resources Manager (CRM) for archaeology at Edwards Air Force Base in accordance with 36 CFR 800.16(y) has determined that the development of a commercial Solar EUL project is a federal undertaking with the potential to adversely affect cultural resources including archaeological sites. The EUL consists of two separate components, the power generation facility located on Edwards AFB and not to exceed 4,000 acres in size, and the gen-tie route options located off-base that will be used to transmit the generated power to a hub connected to the electrical grid up to 14 miles distant. As such, the entire project is subject to the Section 106 process with Edwards AFB acting as the lead agency for Section 106 consultation and Kern County as the lead agency for AB 52 consultation. Pursuant to 36 CFR 800.2 the Section 106 consultation will include the California SHPO, and federal and non-federally recognized tribes. The CRM will also seek additional consulting or interested parties consistent with 36 CFR 800.2(c)(5). Collectively the SHPO, Kern County, private land owners, the EUL developer, tribes, consulting and interested parties will be from here forward referred to as stakeholders. Because identification of historic properties/historical resources and adverse effects/significant impacts under Section 106 of the NHPA/CEQA, respectively, is complete, the CRM will enter into a Memorandum of Agreement (MOA) with the SHPO and consulting parties according to 36 CFR 800.6(b) and (c).

The MOA shall identify the actions required to minimize and resolve adverse effects, including the requirement for preparation of a Historic Properties Treatment Plan (HPTP). The HPTP will require and guide implementation of MM 3.6-2a through MM 3.6-7a for the Proposed Action and Alternatives, and MM 3.6-1b through MM 3.6-4b, and MM-3.6-8b for the gen-tie; these mitigation measures provide performance standards and feasible mitigation to ensure that impacts to cultural resources will be less than significant. The HPTP will outline the procedures for treatment of known historic properties/historical resources and inadvertent discoveries, as well as archaeological monitoring protocols, and outline the requirements for retention of a Secretary of Interior qualified archaeologist to implement mitigation, as appropriate. Development of the MOA and HPTP and in executing the Section 106 process in consultation with all stakeholders ensures that Edwards AFB will fulfill its Section 106 obligations and allow a Record of Decision to be issued, and will ensure that the County's CEQA obligations are satisfied for mitigating significant impacts to a level below significance.

The reports documenting the implementation of the HPTP shall be submitted to the Kern County Planning and Development Director and Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield, and to the CRM.

### **MM 3.6-2a: Data Recovery and Avoidance.**

Where preservation in place of a significant archaeological resource (including Unique Archaeological Resources as defined in CEQA) is not feasible, a qualified archaeologist, in consultation with the Cultural Resource Manager (CRM), County of Kern, consulting tribes, and

1 the project applicant, shall complete archaeological data recovery. This excludes archaeological  
2 resources found to contain human remains and/or funerary objects or sacred objects, which will be  
3 treated according to the NAGPRA Plan of Action. The standard for completion of data recovery  
4 may vary for individual archaeological sites, but is understood herein to be collection of a  
5 statistically representative sample of the archaeological deposits such that data redundancy is  
6 achieved and the unique properties of the archaeological sites are addressed. Implementation of  
7 data recovery mitigation shall include the following steps:

- 8 1. In accordance with the requirements of mitigation measure (MM) 3.6-2, prepare a research  
9 design and archaeological data recovery plan prior to project-related ground disturbance  
10 for the recovery of resources in unavoidable sites that will capture those categories of data  
11 for which the site is significant, and implement the data recovery plan.
- 12 2. The data recovery phase shall focus on recovering archaeological data sufficient to mitigate  
13 the destruction of a portion or the entire site within the area of potential effects (APE).
- 14 3. If, in the opinion of the qualified archaeologist and in light of the data available, the  
15 significance of the site is such that data recovery cannot capture the values that qualify the  
16 site for inclusion on the National Register of Historic Places (NRHP) or California Register  
17 of Historical Resources (CRHR), the applicant shall reconsider project plans in light of the  
18 high value of the cultural resource, and implement more substantial modifications to the  
19 proposed project that shall allow the site to be preserved intact, such as project redesign or  
20 capping the site with fill soil.
- 21 4. Standard archaeological collection and/or excavation units may be used, with methods  
22 consistent with those employed during previous investigations in the region and with  
23 Secretary of Interior's standards. Following completion of the excavations, all cultural  
24 materials shall be washed, cataloged, and analyzed. Technical analyses may include artifact  
25 analysis, radiocarbon dating, obsidian hydration, pollen and protein residue, and other  
26 analyses as needed to describe the cultural materials and archaeological deposits. Prior to  
27 artifact processing, the consulting tribes will be afforded the opportunity to identify  
28 objects/materials that should not be exposed to washing and certain kinds of destructive  
29 analyses and that may be treated according to separate, culturally-specific and appropriate  
30 methods and disposition. A data recovery report shall be prepared and filed with the CRM,  
31 and the California Historical Resources Information System Information Center at  
32 California State University, Bakersfield.
- 33 5. The CRM shall provide for the permanent curation of recovered materials from Edwards  
34 Air Force Base (AFB) property. Curation does not negate artifact relocation described  
35 under MM 3.6-7a, rather artifact relocation and reburial will be the preference whenever  
36 possible.

37 For archaeological sites considered individually eligible for NRHP/CRHR listing (or considered  
38 contributors to the Bissell Basin Archaeological District) that can be avoided, reasonable protective  
39 measures shall be provided, including protective fencing around an avoided resource with an  
40 appropriate buffer, silt fencing to avoid indirect effects through project-related runoff, and other  
41 measures as applicable. In certain instances, avoidance through capping using sterile fill matrix,  
42 use of rubber mats, or other measures may be deemed appropriate to achieve avoidance. All  
43 decisions regarding the specific measures used to achieve preservation in place and capping will  
44 be the result of collaboration amongst consulting parties and the Air Force.

1 General avoidance and capping are two available avoidance measures on Edwards AFB property  
2 and on lands under County of Kern jurisdiction. These forms of avoidance satisfy CEQA  
3 Guidelines Section 15125.4(b)(3).

4 **MM 3.6-3a: Archaeological and Native American Resources Monitoring.** Archaeological and  
5 Native American monitoring are both subject to consultation with the stakeholders under  
6 Section 106. As such, the requirements of various stakeholders must be considered and  
7 accommodation made wherever feasible. Therefore, specific archaeological and Native American  
8 monitoring details cannot be included herein. However, at a minimum it is expected that the  
9 developer shall retain a qualified archaeological monitor and a Native American monitor for  
10 project-related ground disturbing activities for the purpose of identifying and avoiding adverse  
11 effects to significant archaeological resources. The HPTP (MM 3.6-1a) shall provide details on  
12 archaeological and Native American monitoring, including monitor rotation schedules, lines of  
13 authority and communication, monitoring procedures and protocols, and documentation.

14 Ground-disturbing activities include, but are not limited to, brush clearance, grubbing,  
15 excavation, trenching, grading, and drilling, or other activities deemed appropriate for monitoring  
16 identified in the consultation process. Areas requiring monitoring and the level of monitoring  
17 shall be developed by the Edwards AFB Cultural Resources Manager in coordination with the  
18 Applicant, the qualified archaeologist and consulting tribes, and shall be detailed in the MOA and  
19 HPTP for resources on Edwards AFB (as required by Mitigation Measure MM 3.6-1a). Any  
20 archaeological monitors shall be, or work under the direct supervision of, a qualified  
21 archaeologist, defined as an archaeologist meeting the Secretary of the Interior's standards for  
22 professional archaeology and shall be approved by the Air Force. The monitors shall be familiar  
23 with the types of historical and prehistoric resources that could be encountered within the project  
24 area.

25 The archaeological monitor shall ensure that personnel performing ground-disturbing activities  
26 are displaying the appropriate decal on their hardhat demonstrating their CR Awareness training  
27 under Mitigation Measure MM 3.6-5a. The archaeological monitors shall record and be  
28 authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis.  
29 The archaeological monitors shall be present on the project site according to a schedule as  
30 detailed in the MOA and HPTP for resources on Edwards AFB (as required by Mitigation  
31 Measure MM 3.6-1a). The monitors shall maintain a daily log of activities, which will be  
32 appended to a final monitoring report that shall be submitted to the Edwards AFB Cultural  
33 Resources Manager, Kern County Planning and Natural Resources Department, and Southern San  
34 Joaquin Valley Archaeological Information Center. Specific monitoring reporting procedures  
35 shall be detailed in the MOA and HPTP for resources on Edwards AFB, (as required by  
36 Mitigation Measure MM 3.6-1a).

37 **MM 3.6-4a: Inadvertent Discoveries.** During project-level construction, operation and  
38 maintenance, and decommissioning, should cultural resources be discovered, all activity within 100  
39 feet of the find shall stop and a qualified archaeologist shall be contacted to assess the significance  
40 of the find. The Cultural Resource Manager or the Kern County Planning and Community  
41 Development Department shall also be contacted. If the qualified archaeologist, in consultation  
42 with the Cultural Resource Manager or Kern County Planning and Community Development  
43 Department and Consulting Native American tribes, determines the resource is significant (i.e.,  
44 qualifies as a Historic Property, Historical Resource, unique archaeological resource, TCR), or a  
45 contributor to the Bissell Basin Archaeological District, then the archaeologist shall determine, in  
46 consultation with the Cultural Resource Manager or Kern County Planning and Community  
47 Development Department, appropriate avoidance measures or other appropriate mitigation.

1 Preservation in place shall be the preferred manner of mitigation to avoid effects to significant  
2 cultural resources. If it is demonstrated that resources cannot be feasibly avoided, the qualified  
3 archaeologist shall implement the provisions for mitigative treatments detailed in the MOA (as  
4 required by Mitigation Measure MM 3.6-1a). Work shall not resume within 100 feet of the  
5 discovery until permission is received from the Cultural Resource Manager (solar array project  
6 area) or Kern County Planning and Community Development Department (gen-tie line route  
7 project area). In the event of inadvertent discovery of human remains or potential funerary objects  
8 or sacred objects, all work shall be halted within a 100-foot radius and temporary protective  
9 measures shall be implemented.

10 On non-federally owned land, the project proponent shall immediately halt work, contact the Kern  
11 County Coroner to evaluate the remains, and follow the procedures and protocols set forth in  
12 Section 15064.4 (e)(1) of the California Environmental Quality Act Guidelines. If the County  
13 Coroner determines that the remains are Native American, the coroner shall contact the Native  
14 American Heritage Commission, in accordance with Health and Safety Code Section 7050.5,  
15 subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The  
16 Native American Heritage Commission shall designate a most likely descendent for the remains  
17 per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall  
18 ensure that the immediate vicinity, according to generally accepted cultural or archaeological  
19 standards or practices, where the Native American human remains are located, is not damaged or  
20 disturbed by further development activity until the landowner has discussed and conferred with the  
21 most likely descendent regarding their recommendations, if applicable, taking into account the  
22 possibility of multiple human remains. If the remains are determined to be neither of forensic value  
23 to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code  
24 (7100 et. seq.) directing identification of the next-of-kin will apply.

25 On federally owned land, the Air Force shall be notified and human remains and associated funerary  
26 objects shall be treated pursuant to the Native American Graves Protection and Repatriation Act  
27 and in accordance with the MOA and HPTP, and the NAGPRA Plan of Action (included as part of  
28 the HPTP).

29 **MM 3.6-5a: Worker Cultural Awareness Training Program.** Prior to the commencement of  
30 ground-disturbing activities, and for the duration of construction activities, a Worker Cultural  
31 Awareness Training Program shall be provided to all construction personnel prior to their  
32 commencing work at the project site.

- 33 1. The training shall be prepared and conducted by a qualified archaeologist, defined as an  
34 archaeologist meeting the Secretary of the Interior's Standards for professional  
35 archaeology. Representatives from the consulting Native American tribes shall also  
36 provide training, at their discretion. The training may be in the form of a video.
- 37 2. A sticker shall be placed on hard hats indicating that the worker has completed the  
38 environmental/cultural training. Construction personnel shall not be permitted to operate  
39 equipment within the construction area unless they have attended the training and are  
40 wearing hard hats with the required sticker.
- 41 3. A copy of the training transcript and/or training video, as well as a list of the names of all  
42 personnel who attended the training and copies of the signed acknowledgement forms shall  
43 be submitted to the Air Force Cultural Resources Manager.

44 The purpose of the Cultural Awareness Training Program shall be to inform and train construction  
45 personnel of the types of cultural resources that may be encountered during construction, and to

1 bring awareness to personnel of actions to be taken in the event of a cultural resources discovery.  
2 This may include: a discussion of applicable cultural resources statutes, regulations and related  
3 enforcement provisions; an overview of the prehistoric and historic environmental setting and  
4 context, as well as current cultural information regarding local tribal groups; samples or visuals of  
5 artifacts that might be found in the project area; a discussion of what prehistoric and historic  
6 archaeological deposits look like at the surface and when exposed during construction; and  
7 procedures to be followed in the event of an inadvertent discovery, as specified by the MOA and  
8 HPTP (MM 3.6-1a).

9 **MM 3.6-6a Public Outreach and Education Program.** The MOA and HPTP (MM 3.6-2) shall  
10 outline the specific requirements for implementation of a Public Outreach and Education Program.  
11 The goal of this program will be to provide members of the public, including tribal members, media  
12 for interacting with the prehistoric aboriginal past of the Bissell Basin and surrounding region.  
13 Media platforms will vary, but will include hard media, such as story-telling displays, displays of  
14 archaeological material in an interpretive format (may include traveling displays), and digital media  
15 (e.g., internet based content). The HPTP will identify parties responsible for contributing content  
16 and producing deliverables.

17 **MM 3.6-7a Relocation of Cultural Material.** The MOA and HPTP (MM 3.6-2) shall outline the  
18 specific requirements and methods for implementation of an artifact relocation plan, a plan that  
19 shall be developed prior to project implementation and shall be carried out prior to construction for  
20 previously identified resources and during construction for inadvertent discoveries. The HPTP will  
21 specify the decision making process required to identify artifacts in field settings suitable for  
22 relocation, versus those that require formal relocation or repatriation. The CRM and consulting  
23 tribes have determined that not all cultural material that will be impacted by project construction  
24 requires formal curation. Moreover, recognizing that these artifacts will be disturbed during  
25 construction, the collection of disturbed artifacts and placement in a precisely recorded nearby  
26 location is considered suitable treatment of these materials, particularly during archaeological and  
27 tribal monitoring of construction.

28 **MM 3.6-8a: Paleontological Resources Mitigation and Monitoring Plan.** The developer shall  
29 retain a qualified paleontologist to prepare a Paleontological Resources Mitigation and Monitoring  
30 Plan for implementation during construction. The minimum requirement for professional  
31 paleontological work is a 4-year undergraduate program and Master of Science degree, although a  
32 doctoral degree may be required for certain specialties; a qualified paleontologist is one that has  
33 experience in research, field, and laboratory methods for paleontological resources, including  
34 experience in fossil salvage, stratigraphy, fossil preparation, and identification, with experience in  
35 California. The Paleontological Resources Mitigation and Monitoring Plan shall be submitted to  
36 the Air Force for review and approval prior to the start of grading or construction and shall include  
37 the following:

- 38 1. Procedures for the discovery, recovery, and salvage of paleontological resources  
39 encountered during construction, if any, in accordance with standards for recovery  
40 established by the Society of Vertebrate Paleontology.
- 41 2. Verification that the developer has an agreement with a recognized museum repository  
42 (such as the Natural History Museum of Los Angeles County), for the disposition of  
43 recovered fossils and that the fossils shall be prepared prior to submittal to the repository  
44 as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or  
45 cataloged).

- 1           3. Description of monitoring reports that will be prepared, which shall include daily logs and  
2           a final monitoring report with an itemized list of specimens found to be submitted to the  
3           Air Force and the Natural History Museum of Los Angeles County within 90 days of the  
4           completion of monitoring.

5       **MM 3.6-9a: Worker Paleontological Resources Awareness Training Program.** Prior to the  
6       commencement of ground-disturbing activities, and for the duration of construction activities, a  
7       Worker Paleontological Awareness Training Program shall be provided to all construction  
8       personnel prior to their commencing work at the project site. The training may be performed in  
9       concert with the archaeological/cultural resources training (MM 3.6-4a) at the onset of the project.  
10      The training shall be prepared and conducted by a qualified paleontologist. The training may be in  
11      the form of a video. The training may be discontinued when ground disturbance is completed or  
12      suspended, but must resume when ground-disturbing activities resume. A sticker shall be placed  
13      on hard hats indicating that the worker has completed the environmental/cultural training.  
14      Construction personnel shall not be permitted to operate equipment within the construction area  
15      unless they have attended the training and are wearing hard hats with the required sticker. A copy  
16      of the training transcript and/or training video, as well as a list of the names of all personnel who  
17      attended the training and copies of the signed acknowledgement forms shall be submitted to the  
18      Edwards AFB Cultural Resource Manager.

19      The purpose of the Paleontological Awareness Training Program shall be to inform and train  
20      construction personnel of the types of paleontological resources that may be encountered during  
21      construction, and to bring awareness to personnel of actions to be taken in the event of a  
22      paleontological resources discovery. This may include: a discussion of applicable paleontological  
23      resources statues, regulations and related enforcement provisions; samples or visuals of fossils that  
24      might be found in the project area; implementation of the Paleontological Resources Mitigation  
25      and Monitoring Plan; and procedures to be followed in the event of an inadvertent discovery.

26      **MM 3.6-10a: Paleontological Resources Monitoring.** The developer shall provide for a qualified  
27      paleontologist or an individual working under direct supervision of a qualified paleontologist to  
28      monitor construction activities in areas where deeper excavations may be needed (greater than 10  
29      feet). The duration and timing of the monitoring, which shall be set in the Paleontological  
30      Resources Mitigation and Monitoring Plan, shall be determined by the qualified paleontologist, in  
31      consultation with the Air Force and based on the grading plans. Initially, all excavation or grading  
32      activities deeper than ten feet shall be monitored. However, during the course of monitoring, if the  
33      paleontologist can demonstrate that the level of monitoring should be reduced, the paleontologist,  
34      in consultation with the Air Force, may adjust the level of monitoring to circumstances warranted.  
35      If a resource is encountered, the monitor will implement the procedures of the Paleontological  
36      Resources Mitigation and Monitoring Plan. If recovery of a large or unusually productive fossil  
37      occurrence is necessary, the following actions shall be taken:

- 38           1. The paleontological monitor shall immediately notify the project developer, who shall  
39           contact the Air Force.
- 40           2. Construction activities in the immediate vicinity of the site shall stop until authorization  
41           for work to continue is provided by the Air Force.
- 42           3. Treatment and subsequent donation of fossils to a repository, along with the preparation of  
43           a report documenting the absence or discovery of fossil-related resources will be performed  
44           in accordance with the Paleontological Resources Mitigation and Monitoring Plan.

### 3.6.5.2 Gen-tie Mitigation Measures

**MM 3.6-1b: Cultural Resources Personnel Professional Qualifications Standard.** The services of a qualified lead archaeologist meeting the secretary of the Interior’s Standards for professional archaeology (U.S. Department of the Interior, 2008) shall be retained by the project proponent to carry out all mitigation measures related to archaeological, cultural and historical resources. A qualified archeological and Native American monitor may also be retained in order to work with and consult with the lead archaeologist.

1. All ground-disturbing activities within 50-feet of resources (site SS-S-23; SS-S-10; and SS-S-30) per Cultural Resources Assessment of the Gen-Tie Routes by Dudek (Appendix B7) shall be avoided. If these resources cannot be avoided, all ground-disturbing activities within the generation tie-line area shall be monitored by a Native American monitor representing at least one of the Consulting Tribes (Appendix A5), along with the lead or archeological monitor. An Archaeological Monitoring Plan shall be prepared prior to any ground disturbing activity. Ground disturbing activities include, but are not limited to: mowing, brush clearance, grubbing, excavation, trenching, grading, cut and roll vegetation clearing, drilling, equipment laydown or parking.
2. Should any discovery be found during ground work or ground disturbing activities, the qualified Native American monitor and/or qualified archaeological monitor would halt all work within 60-feet of the find and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. The lead archaeologist shall notify the applicant the Tribes and County of the discovery. All parties shall confer regarding the treatment of the discovered resource(s) and the lead archaeologist shall then prepare an Archaeological Treatment Plan for the discoveries. If consensus cannot be reached between all parties, the County shall make the final decision.
3. The archaeological monitor and qualified Native American monitor shall work under the supervision of the qualified archaeologist. The lead archaeologist, archaeological monitor, and qualified Native American monitor shall be provided all project documentation related to cultural resources within the project area 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, and archaeological monitor, and qualified Native American monitor.
4. The lead archaeologist, archaeological monitor, and Native American monitor shall keep daily logs and the qualified archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the qualified archaeologist shall prepare a monitoring report detailing the results of monitoring. All discoveries are subject to proper recordation on California Department of Parks and Recreation (DPR) forms. All final documentation shall be submitted to the Kern County Planning and Natural Resources Department, to the consulting Tribes (Appendix A5) and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.

**MM 3.6-2b: Worker Cultural Awareness Training Program.** Prior to the commencement of ground-disturbing activities, and for the duration of generation tie-line installation and decommissioning activities, a Worker Cultural Awareness Training Program shall be provided to all construction personnel prior to their commencing work at the generation tie-line sites.

- 1 1. The training shall be prepared and conducted by a qualified archaeologist in consultation  
2 or conjunction with the qualified Native American Monitor. The training may be  
3 discontinued when ground disturbance is completed or suspended, but must resume when  
4 ground-disturbing activities resume.
- 5 2. A sticker shall be placed on hard hats indicating that the worker has completed the  
6 environmental/cultural/paleontological training. Construction personnel shall not be  
7 permitted to operate equipment within the construction area unless they have attended the  
8 training and are wearing hard hats with the required sticker.
- 9 3. A copy of the training transcript and/or training video, as well as a list of the names of all  
10 personnel who attended the training and copies of the signed acknowledgement forms shall  
11 be submitted to the Kern County Planning and Natural Resources Department.

12 The purpose of the Cultural Awareness Training Program shall be to inform and train construction  
13 personnel of the types of cultural resources that may be encountered during construction of the gen-  
14 tie lines, and to bring awareness to personnel of actions to be taken in the event of a cultural  
15 resources discovery. This may include: a discussion of applicable cultural resources statutes,  
16 regulations and related enforcement provisions; an overview of the prehistoric and historic  
17 environmental setting and context, as well as current cultural information regarding local tribal  
18 groups; samples or visuals of artifacts that might be found in the project area; a discussion of what  
19 prehistoric and historic archaeological deposits look like at the surface and when exposed during  
20 construction; and procedures to be followed in the event of an inadvertent discovery (see Mitigation  
21 Measure MM 3.6-4b).

22 **MM 3.6-3b: Archaeological and Native American Resources Monitoring.** Archaeological and  
23 Native American monitoring are both subject to consultation with the Native American Tribal  
24 Resource Agencies under Section 106. As such, the requirements of various stakeholders must be  
25 considered and accommodation made wherever feasible. Therefore, specific archaeological and  
26 Native American monitoring details cannot be included herein. However, at a minimum it is  
27 expected that the developer shall retain a qualified archaeological monitor for project-related  
28 ground disturbing activities for the purpose of identifying and avoiding adverse effects to  
29 significant archaeological resources.

- 30 1. Ground disturbing activities include, but are not limited to, brush clearance, grubbing,  
31 excavation, trenching, grading, and drilling. Areas requiring monitoring for the generation  
32 tie-line installation and the level of monitoring shall be developed by the Tribal  
33 Stakeholders and Kern County Planning and Natural Resources Department, in  
34 coordination with the qualified archaeologist, and shall be detailed in the Cultural  
35 Resources Management Plan for the gen-tie line route. Any archaeological monitors shall  
36 be, or work under the direct supervision of, a qualified archaeologist, defined as an  
37 archaeologist meeting the Secretary of the Interior's standards for professional archaeology  
38 and shall be approved by Kern County Planning and Natural Resources Department. The  
39 monitors shall be familiar with the types of historical and prehistoric resources that could  
40 be encountered within the project area.
- 41 2. The archaeological monitor shall ensure that personnel performing ground-disturbing  
42 activities are displaying the appropriate decal on their hardhat demonstrating their Cultural  
43 Resources (CR) Awareness training under Mitigation Measure MM 3.6-2b. The  
44 archaeological monitors shall record soil samples and artifact/ecofact material as warranted  
45 for analysis. The archaeological monitors shall be present on the generation tie-line site  
46 according to a schedule as detailed in the Cultural Resources Management Plan for the

1 gen-tie line route. The monitors shall maintain a daily log of activities, which will be  
2 appended to a final monitoring report that shall be submitted to the Kern County Planning  
3 and Natural Resources Department, and Southern San Joaquin Valley Archaeological  
4 Information Center. Specific monitoring reporting procedures shall be detailed in the  
5 Cultural Resources Management Plan for the gen-tie line routes.

6 3. Section 106 consultation with Native American tribes may result in a need for one or more  
7 Native American monitors. The specific nature of the monitoring activity performed by  
8 Native American tribes can vary and therefore the requirements for Native American  
9 monitors will be elicited as part of consultation.

10 **MM 3.6-4b: Inadvertent Discoveries.** During generation tie-line construction and  
11 decommissioning, should cultural or paleontological resources be discovered, all activity within 60  
12 feet of the find shall stop and a qualified paleontologist shall be contacted to assess the significance  
13 of the find. The area of the discovery shall be marked off as an Environmentally Sensitive Area  
14 (ESA) and a physical demarcation/barrier constructed. All entrance to the area shall be avoided  
15 until the discovery is assessed by the qualified archaeologist and/or Native American  
16 representative, if the discovery involves resources of interest to Native American tribes, including  
17 but not limited to prehistoric archaeological sites or tribal cultural resources. If the qualified  
18 archaeologist, in consultation with the consulting Native American tribe(s) determines the resource  
19 is significant (i.e., qualifies as a historic property, historical resource, or unique archaeological  
20 resource), then the archaeologist shall determine appropriate avoidance measures or other  
21 appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), project redesign and  
22 preservation in place shall be the preferred means to avoid impacts to significant historical  
23 resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(c), if it is demonstrated that  
24 resources cannot be feasibly avoided, the qualified archaeologist, in consultation with the  
25 consulting Tribes, shall develop additional treatment measures which may include data recovery or  
26 other appropriate measures or shall implement the provisions for mitigative treatments detailed in  
27 the Paleontological Resources Management Plan for the gen-tie line route (as required by MM 3.6-  
28 5b). Work shall not resume within 60 feet of the discovery until permission is received from the  
29 Paleontologist and/or Native American representative(s), and if in disagreement, the Kern County  
30 Planning and Natural Resources Department shall be consulted.

31 **MM 3.6-5b: Paleontological Resources Mitigation and Monitoring Plan.** The developer shall  
32 retain a qualified paleontologist to prepare a Paleontological Resources Mitigation and Monitoring  
33 Plan for implementation during construction of the generation tie lines. The minimum requirement  
34 for professional paleontological work is a 4-year undergraduate program and Master of Science  
35 degree, although a doctoral degree may be required for certain specialties; a qualified paleontologist  
36 is one that has experience in research, field, and laboratory methods for paleontological resources,  
37 including experience in fossil salvage, stratigraphy, fossil preparation, and identification, with  
38 experience in California. The Paleontological Resources Mitigation and Monitoring Plan shall be  
39 submitted to the Kern County Planning and Natural Resources Department for review and approval  
40 prior to the start of grading or construction and shall include the following:

- 41 1. Procedures for the discovery, recovery, and salvage of paleontological resources  
42 encountered during construction, if any, in accordance with standards for recovery  
43 established by the Society of Vertebrate Paleontology.
- 44 2. Verification that the developer has an agreement with a recognized museum repository  
45 (such as the Natural History Museum of Los Angeles County), for the disposition of  
46 recovered fossils and that the fossils shall be prepared prior to submittal to the repository

1 as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or  
2 cataloged).

3 3. Description of monitoring reports that will be prepared, which shall include daily logs and  
4 a final monitoring report with an itemized list of specimens found to be submitted to the  
5 Kern County Planning and Natural Resources Department and the Southern San Joaquin  
6 Valley Information Center at California State University, Bakersfield within 90 days of the  
7 completion of monitoring. Consultation of any find in the right-of-way shall be conducted  
8 the Southern San Joaquin Valley Information Center at California State University,  
9 Bakersfield.

10 4. The project applicant shall provide for the permanent curation of recovered materials from  
11 lands under the County of Kern jurisdiction at a federally approved curation facility, such  
12 as the Tejon Tribal Curation Facility.

13 **MM 3.6-6b: Worker Paleontological Resources Awareness Training Program.** Prior to the  
14 commencement of ground-disturbing activities, and for the duration of construction activities, a  
15 Worker Paleontological Awareness Training Program shall be provided to all construction personnel  
16 prior to their commencing work on installation of generation tie-line sites.

17 1. The training may be performed in concert with the archaeological/cultural resources  
18 training prior to the onset of the generation tie-line installation. The training shall be  
19 prepared and conducted by a qualified paleontologist. The training may be in the form of  
20 a video.

21 2. The training may be discontinued when ground disturbance is completed or suspended, but  
22 must resume when ground-disturbing activities resume.

23 3. A sticker shall be placed on hard hats indicating that the worker has completed the  
24 environmental/cultural/paleontological training.

25 4. Construction personnel shall not be permitted to operate equipment within the construction  
26 area unless they have attended the training and are wearing hard hats with the required  
27 sticker.

28 5. A copy of the training transcript and/or training video, as well as a list of the names of all  
29 personnel who attended the training and copies of the signed acknowledgement forms shall  
30 be submitted to the Kern County Planning and Natural Resources Department.

31 6. The purpose of the Paleontological Awareness Training Program shall be to inform and  
32 train construction personnel of the types of paleontological resources that may be  
33 encountered during construction, and to bring awareness to personnel of actions to be taken  
34 in the event of a paleontological resources discovery. This may include: a discussion of  
35 applicable paleontological resources statues, regulations and related enforcement  
36 provisions; samples or visuals of fossils that might be found in the project area;  
37 implementation of the Paleontological Resources Mitigation and Monitoring Plan; and  
38 procedures to be followed in the event of an inadvertent discovery.

39 7. Consultation on any find in the right-of-way shall be conducted with the Natural History  
40 Museum of Los Angeles County.

41 **MM 3.6-7b: Paleontological Resources Monitoring.** The developer shall provide for a qualified  
42 paleontologist or an individual working under direct supervision of a qualified paleontologist to  
43 monitor construction activities in areas where deeper excavations may be needed (greater than 10  
44 feet). The duration and timing of the monitoring, which shall be set in the Paleontological

1 Resources Mitigation and Monitoring Plan, shall be determined by the qualified paleontologist, in  
2 consultation with the Tribal Stakeholders and Kern County Planning and Natural Resources  
3 Department and based on the grading plans. Initially, all excavation or grading activities deeper  
4 than 10 feet shall be monitored. However, during the course of monitoring, if the paleontologist  
5 can demonstrate that the level of monitoring should be reduced, the paleontologist, in consultation  
6 with the Tribal Stakeholders and Kern County Planning and Natural Resources Department, may  
7 adjust the level of monitoring to circumstances warranted. If a resource is encountered, the monitor  
8 will implement the procedures of the Paleontological Resources Mitigation and Monitoring Plan.  
9 If recovery of a large or unusually productive fossil occurrence is necessary, the following actions  
10 shall be taken:

- 11 1. The paleontological monitor shall immediately notify the project developer, who shall  
12 contact the Tribal Stakeholders and Kern County Planning and Natural Resources  
13 Department.
- 14 2. Construction activities in the immediate vicinity of the site shall stop until authorization  
15 for work to continue is provided by the Tribal Stakeholders and Kern County Planning and  
16 Natural Resources Department.
- 17 3. Treatment and subsequent donation of fossils to a repository, along with the preparation of  
18 a report documenting the absence or discovery of fossil-related resources will be performed  
19 in accordance with the Paleontological Resources Mitigation and Monitoring Plan.

20 **MM 3.6-8b: Discovery of Human Remains.** In the event of inadvertent discovery of human  
21 remains during construction and decommissioning of generation tie-lines, all work shall be halted  
22 and the Kern County Coroner shall be contacted to evaluate the remains and follow the procedures  
23 and protocols set forth in Section 15064.4 (e)(1) of the California Environmental Quality Act  
24 Guidelines. At that time, the project proponent shall contact the Kern County Planning and Natural  
25 Resources Department regarding the find. If the County Coroner determines the remains are Native  
26 American in origin, the Coroner shall contact the Native American Heritage Commission in  
27 accordance with Health and Safety Code Section 7050.5 subdivision c, and Public Resources Code  
28 Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission  
29 shall designate a Most Likely Descendent (MLD) for the remains per Public Resources Code  
30 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate  
31 vicinity, according to generally accepted cultural or archaeological standards or practices, where  
32 the Native American human remains are located, is not damaged or disturbed by further  
33 development activity until the landowner has discussed and conferred with the most likely  
34 descendent regarding their recommendations, if applicable, taking into account the possibility of  
35 multiple human remains. If the remains are determined to be neither of forensic value to the  
36 Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100  
37 et. seq.) directing identification of the next-of-kin will apply.

38

### 1 3.6.6 Residual Impacts after Mitigation

2 Compliance with the terms and conditions of Mitigation Measures MM 3.6-1a through MM 3.6-10a  
3 for the solar facility portion of the project and Mitigation Measures MM 3.6-1b through 3.6-8b for  
4 the gen-tie portion of the project would reduce but may not fully avoid Proposed Action–related  
5 effects on cultural resources. Any cultural resources damaged or destroyed by project construction,  
6 even if subjected to mitigation measures, would be permanently lost from the archaeological record.  
7 This would make the cultural resources unavailable for future study to address future research needs  
8 when more advanced investigative techniques and methods of analysis might be available. In  
9 addition, some contemporary Native American stakeholders consider disturbance of buried  
10 artifacts to cause direct cultural and spiritual harm. Therefore, although some prescribed treatments  
11 may resolve adverse effects to historic properties (i.e., NRHP-eligible resources) under NHPA  
12 Section 106, direct effects to cultural resources may remain significant under NEPA and CEQA.

## 3.7 Geology, Minerals, and Soils

### 3.7.1 Affected Environment

This EIS/EIR section describes the affected environment for geology, minerals, and soils characteristics of the project sites, potential impacts to geology and soils associated with construction and operation of the proposed project, including the regulatory and environmental settings, and mitigation measures that would reduce these impacts where applicable.

The technical information and analysis provided in this section is based on the National Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2017); Mineral Land Classification of Southeastern Kern County (Koehler, 1999); and the Preliminary Geologic Hazards and Soils Report prepared by Petra Geotechnical, Inc. on July 20, 2012, which is included as Appendix B9 of this EIS/EIR.

#### 3.7.1.1 Scoping Issues Addressed

No comments related to geology, minerals, and soils were received.

#### 3.7.1.2 Regulatory Framework

##### *Federal*

##### **Earthquake Hazards Reduction Act**

The Earthquake Hazards Reduction Act was enacted in 1997 to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended by the Earthquake Hazards Reduction Program Reauthorization Act of 2004 (Public Law 108-360).

NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed project would be required to adhere (FEMA, 2013).

##### **Clean Water Act (Erosion Control)**

The Clean Water Act (CWA) (33 U.S. Code (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

1 source and certain nonpoint source discharges to surface water. Those discharges are regulated by  
2 the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402).  
3 Projects that disturb 1 acre or more of land are generally required to obtain NPDES coverage under  
4 the NPDES General Permit for Storm Water Discharges Associated with Construction Activity  
5 (General Permit), Order No. 99-08-DWQ. The General Permit requires the development and  
6 implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes best  
7 management practices (BMPs) to protect stormwater runoff, including measures to prevent soil  
8 erosion. Requirements of the federal CWA and associated SWPPP requirements are described in  
9 further detail in Section 3.17, *Hydrology and Water Quality*.

10 Development standards would require the proposed project to comply with the seismic design  
11 criteria found in the Uniform Building Code (UBC). In addition, an adequate design for drainage  
12 facilities and pre-construction soil and grading studies would be required. Although seismic design  
13 standards have been established to reduce many of the structural problems that occur during major  
14 earthquakes, the UBC was revised in 1998 as follows:

- 15 • Upgrade the level of ground motion used in the seismic design of buildings.
- 16 • Add site amplification factors based on local soil conditions.
- 17 • Improve the way ground motion is applied in detailed design.

18 Construction on Edwards AFB must also comply with the UBC, Unified Facility Criteria,  
19 Specifications and Guides, and Department of Defense United Facilities Criteria and  
20 Specifications, including Unified Facilities Guide Specifications 48-14-00. These criteria generally  
21 rely on commercial standards.

## 22 **State**

### 23 **Alquist-Priolo Earthquake Fault Zoning Act of 1972**

24 The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone  
25 Act) of 1972 (revised in 1994) is the State law that addresses hazards from earthquake fault zones.  
26 The purpose of this law is to mitigate the hazard of surface fault rupture by regulating development  
27 near active faults. As required by the Act, the State has delineated Earthquake Fault Zones  
28 (formerly Special Studies Zones) along known active faults in California.

### 29 **The Seismic Hazards Mapping Act of 1990**

30 In accordance with California Public Resources Code Chapter 7.8, Division 2, the California  
31 Geological Survey is directed to delineate seismic hazard zones. The purpose of the act is to reduce  
32 the threat to public health and safety and minimize the loss of life and property by identifying and  
33 mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction,  
34 landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and state  
35 agencies are directed to use seismic hazard zone maps developed by the California Geological  
36 Survey in their land use planning and permitting processes. In accordance with the Seismic Hazards  
37 Mapping Act, site-specific geotechnical investigations must be performed prior to permitting most  
38 urban development projects within seismic hazard zones.

1 The Division of Oil, Gas, and Geothermal Resources (DOGGR) is a division within the California  
2 Department of Conservation responsible for supervising the drilling, operation, maintenance,  
3 plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program  
4 promotes the sensitive development of oil, natural gas, and geothermal resources in California  
5 through sound engineering practices, prevention of pollution, and implementation of public safety  
6 programs. To implement this regulatory program, DOGGR requires avoidance of building over or  
7 near plugged or abandoned oil and gas wells, or requires the remediation of wells to current  
8 DOGGR standards. DOGGR requirements would apply to the Proposed Action in the event that an  
9 oil, gas or geothermal well is encountered on the project site.

10 The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into  
11 Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. The primary  
12 goal of mineral land classification is to ensure that the mineral potential of land is recognized by  
13 local government decision-makers and considered before land-use decisions are made that could  
14 preclude mining. MRZs in the vicinity of the proposed project are presented in the environmental  
15 setting section above. The Proposed Action would not conflict with the Surface Mining and  
16 Reclamation Act of 1975.

#### 17 **The California Building Code**

18 The California Building Code (CBC) has been codified in the California Code of Regulations  
19 (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards  
20 Commission, which, by law, is responsible for coordinating all building standards. The purpose of  
21 the CBC is to establish minimum standards to safeguard the public health, safety, and general  
22 welfare through structural strength, means of egress facilities, and general stability by regulating  
23 and controlling the design, construction, quality of materials, use and occupancy, location, and  
24 maintenance of all buildings and structures within its jurisdiction. The provisions of the CBC apply  
25 to the construction, alteration, movement, replacement, and demolition of every building or  
26 structure or any appurtenances connected or attached to such buildings or structures throughout  
27 California.

28 The earthquake design requirements take into account the occupancy category of the structure, site  
29 class, soil classifications, and various seismic coefficients, which are used to determine a Seismic  
30 Design Category (SDC) for a project, as described in Chapter 16 of the CBC. The SDC is a  
31 classification system that combines the occupancy categories with the level of expected ground  
32 motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high  
33 seismic vulnerability and near a major fault). Design specifications are then determined according  
34 to the SDC in accordance with Chapter 16 of the CBC. For Seismic Design Categories D, E, and  
35 F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to  
36 faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls,  
37 liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing  
38 capacity. It also addresses mitigation measures to be considered in structural design, which may  
39 include ground stabilization, selecting appropriate foundation type and depths, selecting  
40 appropriate structural systems to accommodate anticipated displacements, or any combination of  
41 these measures. The potential for liquefaction and soil strength loss must be evaluated for site-

1 specific peak ground acceleration magnitudes and source characteristics consistent with the design  
2 earthquake ground motions.

3 ***Local***

4 **Kern County General Plan**

5 Construction of the Proposed Action would be subject to policies and regulations contained within  
6 the Kern County General Plan (KCGP): Land Use, Open Space, and Conservation Elements. The  
7 KCGP identifies goals, policies, and implementation measures to prevent loss of life, reduce  
8 personal injuries and property damage, and minimize economic and social diseconomies as a result  
9 of natural disasters by directing development to areas that are not hazardous or physically or  
10 environmentally constrained. Further, the KCGP establishes goals and policies to protect areas of  
11 important mineral, petroleum, and agricultural resources for future use. The policies, goals, and  
12 implementation measures in the Kern County General Plan that pertain to geology and soils and  
13 are applicable to the proposed project are provided below. The Kern County General Plan contains  
14 additional policies, goals, and implementation measures that are more general in nature and not  
15 specific to development, such as the Proposed Action. These measures are not listed below, but as  
16 stated in Chapter 1, *Introduction*, all policies, goals, and implementation measures in the Kern  
17 County General Plan are incorporated by reference.

18 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation**  
19 **Element**

20 1.3 Physical and Environmental Constraints

21 Goal

22 Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage,  
23 minimize economic and social diseconomies resulting from natural disaster by  
24 directing development to areas which are not hazardous.

25 Policy

26 Policy 1: Kern County will ensure that new developments will not be sited on land that is  
27 physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map  
28 Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5  
29 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste  
30 Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development  
31 unless appropriate studies establish that such development will not result in  
32 unmitigated significant impact.

33 Implementation Measure

34 Measure N: Applicants for new discretionary development should consult with the appropriate  
35 Resource Conservation District and the California Regional Water Quality Control  
36 Board regarding soil disturbances issues.

37 Policy

38 Policy 1: The County shall require development for human occupancy to be placed in a  
39 location away from an active earthquake fault in order to minimize safety concerns.

1 Implementation Measures

2 Measure B: Require geological and soils engineering investigations in identifying significant  
3 geologic hazard areas in accordance with the Kern County Code of Building  
4 Regulations.

5 Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be  
6 considered significant geologic hazard areas. Proper precautions should be  
7 instituted to reduce seismic hazard, whenever possible in accordance with State  
8 and County regulations.

9 Policies

10 Policy 1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map  
11 Code 2.3) prior to discretionary development and determine specific mitigation to  
12 be incorporated into the foundation design, as necessary, to prevent or reduce  
13 damage from liquefaction in an earthquake.

14 Policy 3: Reduce potential for exposure of residential, commercial, and industrial  
15 development to hazards of landslide, land subsidence, liquefaction, and erosion.

16 1.9 Resource

17 Goals

18 Goal 1: To contain new development within an area large enough to meet generous  
19 projections of foreseeable need, but in locations that will not impair the economic  
20 strength derived from the petroleum, agriculture, rangeland, or mineral resources  
21 or diminish the other amenities that exist in the County.

22 Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential  
23 for future use.

24 Goal 3: Ensure the development of resource areas minimize effects on neighboring  
25 resource lands.

26 Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while  
27 protecting the environment.

28 Policies

29 Policy 14: Emphasize conservation and development of identified mineral deposits.

30 Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be  
31 protected from encroachment of incompatible land uses.

32 Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and  
33 Petroleum) areas.

34 Implementation Measures

35 Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until  
36 the regional and statewide importance mineral deposits map has been completed,  
37 as required by the Surface Mining and Reclamation Act.

38 Measure K: Protect oilfields and mineral extraction areas through the use of appropriate  
39 implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR  
40 (Natural Resource), or PE (Petroleum Extraction).

1 The Kern County Safety Element, shown below, includes goals and implementation measures to  
2 minimize injury and property damage by requiring geological and soils engineering investigations  
3 to identify significant geologic hazard areas in accordance with the Kern County Code of Building  
4 Regulations.

5 **Kern County General Plan Chapter 4: Safety Element**

6 Goal

7 Goal 1: Minimize injuries and loss of life and reduce property damage.

8 4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

9 Policy

10 Policy 1: The County shall require development for human occupancy to be placed in a  
11 location away from an active earthquake fault in order to minimize safety concerns.

12 Implementation Measure

13 Measure B: Require geological and soils engineering investigations in identifying significant  
14 geologic hazard areas in accordance with the Kern County Code of Building  
15 Regulations.

16 4.5 Landslides, Subsidence, Seiche, and Liquefaction

17 Policies

18 Policy 1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map  
19 Code 2.3) prior to discretionary development and determine specific mitigation to  
20 be incorporated into the foundation design, as necessary, to prevent or reduce  
21 damage from liquefaction in an earthquake.

22 Policy 3: Reduce potential for exposure of residential, commercial, and in industrial  
23 development to hazards of landslide, land subsidence, liquefaction, and erosion.

24 The Mojave Specific Plan includes policies intended to minimize potential damage to structures  
25 and loss of life that could result from earthquakes. Safety measures required by the UBC and Kern  
26 County Seismic Safety Element during construction or new buildings are also incorporated.

27 The South of Mojave–Elephant Butte Specific Plan includes implementation measures for  
28 compliance with the requirements of the California Health and Safety Code and the Kern County  
29 Health Department with regard to extraction and processing of mineral resources or cessation of  
30 such operations.

31 The West Edwards Road Settlement Specific Plan identifies policies and implementation measures  
32 to use zoning and other land use controls to regulate future development on land that is geologically  
33 unsound or when physical hazards have been identified. Site development will be accomplished in  
34 compliance with the Kern County Flood Damage Prevention Ordinance and the Kern County  
35 Zoning Ordinance.

1 The Willow Springs Specific Plan includes policies, goals, and implementation measures that  
2 promote seismic safety and healthful living environments. Safety measures required by the UBC  
3 and Kern County Seismic Safety Element during construction of new buildings are also  
4 incorporated.

5 **Kern County Code of Building Regulations (Title of the Ordinance Code of Kern County)**

6 The Kern County Code of Building Regulations requires all construction to conform to Chapter  
7 17.08, Building Code, 2016 Edition, (CCR Title 24), which imposes substantially the same  
8 requirements as the International Building Code, 2015 Edition, with some modifications and  
9 amendments, as the entire county is located in Seismic Zone 4, which was previously used in the  
10 Uniform Building Code to denote areas of highest risk for earthquake and ground motion.

11 **Chapter 17.28. Kern County Grading Code**

12 The Kern County Grading Code was established with the intent to safeguard life, limb, property,  
13 and the public welfare by regulating grading on private property. All requirements of the Kern  
14 County Grading Code would be applied during implementation of the proposed project. All  
15 required grading permit(s) would be obtained prior to commencement of construction activities.  
16 Sections of the Grading Code that are particularly relevant to geology and soils are Section  
17 17.28.140 Erosion Control and Section 17.28.170 Grading Inspection.

18 **Section 17.28.140. Erosion Control**

19 A. Slopes. The faces of cut-and-fill slopes shall be prepared and maintained to control erosion.  
20 This control may consist of effective planting. Protection for the slopes shall be installed as  
21 soon as practicable and prior to calling for final approval. Where cut slopes are not subject to  
22 erosion due to the erosion-resistant character of the materials, such protection may be omitted.

23 B. Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods  
24 shall be employed to control erosion and provide safety.

25 C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at  
26 the end of each work day during grading operations, such that existing drainage channels would  
27 not be blocked. Dust control shall be applied to all graded areas and materials. This shall consist  
28 of applying water or another approved dust palliative for the alleviation or prevention of dust  
29 nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or  
30 drainage channels shall not be allowed.

31 **Section 17.28.170. Grading Inspection**

32 A. General. All grading operations for which a permit is required shall be subject to inspection by  
33 the building official. Professional inspection of grading operations and testing shall be provided  
34 by the civil engineer, soils engineer and the engineering geologist retained to provide such  
35 services in accordance with Subsection 17.28.170(E) for engineered grading and as required  
36 by the building official for regular grading.

37 B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's  
38 area of technical specialty, which shall consist of observation and review as to the  
39 establishment of line, grade and surface drainage of the development area. If revised plans are  
40 required during the course of the work they shall be prepared by the civil engineer.

- 1 C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's  
2 area of technical specialty, which shall include observation during grading and testing for  
3 required compaction. The soils engineer shall provide sufficient observation during the  
4 preparation of the natural ground and placement and compaction of the fill to verify that such  
5 work is being performed in accordance with the conditions of the approved plan and the  
6 appropriate requirements of this chapter. Revised recommendations relating to conditions  
7 differing from the approved soils engineering and engineering geology reports shall be  
8 submitted to the permittee, the building official and the civil engineer.
- 9 D. Engineering Geologist. The engineering geologist shall provide professional inspection within  
10 such engineer's area of technical specialty, which shall include professional inspection of the  
11 bedrock excavation to determine if conditions encountered are in conformance with the  
12 approved report. Revised recommendations relating to conditions differing from the approved  
13 engineering geology report shall be submitted to the soils engineer.
- 14 E. Permittee. The permittee shall be responsible for the work to be performed in accordance with  
15 the approved plans and specifications and in conformance with the provisions of this code, and  
16 the permittee shall engage consultants, if required, to provide professional inspections on a  
17 timely basis. The permittee shall act as a coordinator between the consultants, the contractor  
18 and the building official. In the event of changed conditions, the permittee shall be responsible  
19 for informing the building official of such change and shall provide revised plans for approval.
- 20 F. Building Official. The building official may inspect the project at the various stages of the work  
21 requiring approval to determine that adequate control is being exercised by the professional  
22 consultants.
- 23 G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this  
24 chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work  
25 is not being done in conformance with this chapter or the approved grading plans, the  
26 discrepancies shall be reported immediately in writing to the permittee and to the building  
27 official. Recommendations for corrective measures, if necessary, shall also be submitted.
- 28 H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist  
29 of record is changed during the course of the work, the work shall be stopped until:
- 30 1. The civil engineer, soils engineer, or engineering geologist, has notified the building  
31 official in writing that they will no longer be responsible for the work and that a  
32 qualified replacement has been found who will assume responsibility.
- 33 2. The replacement civil engineer, soils engineer, or engineering geologist notifies the  
34 building official in writing that they have agreed to accept responsibility for the work.

### 35 **National Pollutant Discharge Elimination System Permit Requirements**

36 The Kern County NPDES Program serves as a regulatory substitute to ensure water quality within  
37 the County is maintained during all construction activities, regardless of discharge location. The  
38 Kern County NPDES Program applies to all projects that would disturb more than 1 acre and  
39 requires the developer to submit a form to the Kern County Public Works Department including  
40 information regarding background information on construction activities and to identify whether  
41 stormwater runoff has the potential to discharge into waters of the United States, be contained  
42 onsite, or discharge indirectly offsite into a river, lake, stream, or offsite drainage facility. The

1 anticipated discharge area would determine the need for a SWPPP. In the case of the project, no  
2 waters of the United States are present onsite, however, the project would still require the  
3 development of a SWPPP and Best Management Practices (BMPs) for Kern County Public Works  
4 approval.

### 5 **3.7.1.3 Environmental Setting**

6 This section of the EIS/EIR describes the existing physical environmental conditions in the vicinity  
7 of the project as they relate to the potential impacts on geology, minerals, and soils of the Proposed  
8 Action.

#### 9 ***Regional Setting***

#### 10 **Minerals**

11 Public policy states that the nonrenewable characteristic of mineral deposits necessitates the careful  
12 and efficient development of mineral resources in order to prevent the unnecessary waste of these  
13 deposits due to careless exploitation and uncontrolled urbanization. Management of these mineral  
14 resources will protect not only future development of mineral deposit areas, but will also guide the  
15 exploitation of mineral deposits so that adverse impacts caused by mineral extraction will be  
16 reduced or eliminated. This section discusses the existing conditions related to mineral resources  
17 within the project area, which includes the project site. The State Geologist has classified 2,971  
18 square miles of land in Kern County as MRZs of varying significance. Mineral resources in Kern  
19 County include numerous mining operations that extract a variety of materials, including sand and  
20 gravel, stone, gold, dimensional stone, limestone, clay, shale, gypsum, pumice, decorative rock,  
21 silica, and specialty sand. Significant mineral resources located in southeastern Kern County  
22 include borates, limestone, gold, and dimension stone. MRZs are classified as follows (Koehler,  
23 1999):

24 **MRZ-1:** Areas where adequate geologic information indicates that no significant  
25 minerals deposits are present, or where it is judged that little likelihood exists  
26 for their presence.

27 **MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant  
28 measured or indicated resources are present. Areas classified MRZ-2a contain  
29 discovered mineral deposits that are either measured or indicated reserves. Land  
30 included in MRZ-2a is of prime importance because it contains known economic  
31 mineral deposits.

32 **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that  
33 significant inferred resources are present. Areas classified MRZ-2b contain  
34 inferred mineral resources as determined by their lateral extension from proven  
35 deposits or their similarity to proven deposits. Further exploration could result in  
36 upgrading areas classified MRZ-2b to MRZ-2a.

37 **MRZ-3a:** Areas containing known mineral occurrences of undetermined economic  
38 significance. Further exploration could result in reclassification of all or part of  
39 these areas into the MRZ-2a or MRZ-2b categories.

40 **MRZ-3b:** Areas containing inferred mineral occurrences of undetermined economic  
41 significance. Further exploration could result in the reclassification of all or part  
42 of these areas into the MRZ-2a or MRZ-2b categories.



1 in alluvial fan deposits along the north flank of the San Emidio and Tehachapi Mountains at the  
2 southern end of the county, approximately 20 miles west of the project site.

### 3 **Borax**

4 Borax, a borate mineral (a compound that contains boron and oxygen), was discovered and put into  
5 production in 1872 in Nevada and later, in 1881, in Death Valley. Ironically, for 5 years the route  
6 traveled by Pacific Coast Borax Company's famous twenty-mule team trains would pass within 15  
7 miles of a buried deposit that would produce in about 6 minutes the equivalent tonnage hauled by  
8 the mule team during each trip. The discovery of borates in southeastern Kern County was  
9 accidental, when in 1913 a water well penetrated lakebeds containing colemanite (calcium borate).  
10 In 1927, underground mining of the minerals kernite and borax began at a mine near Boron  
11 currently operated by Rio Tinto Minerals (State Mine ID #91-15-0022) and continued until 1957,  
12 when underground operations ceased and open-pit mining began, eventually becoming the largest  
13 open-pit mine in California. Annually, over 3.3 million tons are removed from this mine, which  
14 supplies about 50 percent of the world's supply of borates.

### 15 **Limestone**

16 Limestone (carbonate rocks) were initially quarried in Kern County in 1888 as a source of lime. By  
17 1909 the limestone resources were used for the manufacture of Portland cement during the  
18 construction of the first Los Angeles aqueduct. Limestone has been mined continuously since 1921,  
19 just northeast of Tehachapi. The Tehachapi Plant was joined by California Portland Cement  
20 Company's Mojave Plant in 1955 and National Cement Company's Lebec Plant in 1976, making  
21 Portland cement production second only to borates in terms of economic importance to the region.

### 22 **Dimension Stone**

23 Dimension stone is natural rock material quarried for the purpose of obtaining blocks or slabs that  
24 meet specifications as to size (width, length, and thickness) and shape. Color, grain texture and  
25 pattern and surface finish, durability, strength, and polishability are important selection criteria in  
26 determining dimension stone. Deposits of marble, sandstone, schist, and other rocks in Kern County  
27 have been sources of modest tonnages of building stones that have been utilized as dimension stone,  
28 field stone, rubble, and flagstone. Most of the dimension stone (marble and flagstone) was mined  
29 before 1904; field stone and flagstone have been mined mostly since about 1952 in the area around  
30 Randsburg. There are three permitted dimension stone mining operations near Randsburg, and  
31 permits have been issued to allow production to continue beyond 2070.

### 32 **Precious Minerals/Gold**

33 In terms of total dollar value and number of deposits, gold is the most important metallic mineral  
34 commodity that has been produced in Kern County. The earliest mining in Kern County was in  
35 1851 at placer gold deposits in Greenhorn Gulch, which drains into the Kern River about midway  
36 between Democrat Springs and Miracle Hot Springs. The first lode mining was in 1852, and by  
37 1865 gold was being produced in four districts around the Kern River. Gold was first prospected in  
38 eastern Kern in the 1860s, with the two largest mines being established in the 1890s. The Yellow  
39 Aster and Golden Queen mines located in eastern Kern have yielded almost half of the total gold  
40 output of the county. The principal sources of silver in Kern County have been deposits in eastern  
41 Kern County.

1 **Geology and Soils**

2 The proposed project is located in the northwestern portion of the Mojave Desert Geomorphic  
3 Province, a broad interior region of isolated mountains separated by desert plains. The Mojave  
4 Desert Geomorphic Province lies between the northeast-trending Garlock Fault on the north and  
5 the northwest-trending San Andreas Fault on the south (Petra Geotechnical, 2012).

6 Kern County is located in one of the more seismically active areas of California and may at any  
7 time be subject to moderate to severe ground shaking. This hazard exists because elastic strains  
8 accumulate deep within the earth, resulting in movement along a fracture zone that releases large  
9 amounts of energy. Seismicity is the geographic and historical distribution of earthquakes,  
10 including their frequency, intensity, and distribution. Seismic hazards include surface rupture,  
11 ground shaking, liquefaction, landslides, subsidence, and expansive soils.

12 **Regional Faults**

13 The faults discussed below, as well as other regional faults, contribute to the potential ground  
14 shaking at the subject site. Based on probabilistic analysis from the California Geological Survey,  
15 peak ground acceleration at the site is estimated to be approximately 0.31g (based on 10 percent  
16 probability of being exceeded in 50 years). This probability analysis takes into account the  
17 earthquake histories, slip rates, and potential earthquake magnitudes of significant regional faults  
18 (Petra Geotechnical, 2012).

19 **Garlock Fault**

20 The Garlock Fault extends eastward approximately 150 miles from its point of origin at the San  
21 Andreas Fault near Lebec, California. The Garlock Fault zone is a prominent geologic feature and  
22 marks the northern boundary of the Mojave Block in southern California. Although the fault has  
23 not experienced a surface rupture during an earthquake in historic times, there have been significant  
24 earth movements recorded along the Garlock Fault zone. The most recent earthquake was a  
25 magnitude 5.7 near the town of Mojave on July 11, 1992, and it is believed to have been triggered  
26 by the Landers earthquake 2 weeks prior. The Garlock fault is considered active, meaning it has  
27 shown evidence of movement over the last 11,000 years, and it has even shown movement in recent  
28 years. Based on the known history and seismic context, the Garlock Fault is capable of causing  
29 substantial ground movement in the project area, which is just 11 miles southeast of the fault trace  
30 (Petra Geotechnical, 2012).

31 **San Andreas Fault**

32 The San Andreas Fault is the most prominent fault in California and runs approximately 650 miles  
33 from the Mendocino Escarpment in the north to the Imperial Valley in the south, and is considered  
34 the boundary between the North American Plate and the Pacific Plate. The last major earthquake  
35 on this segment of the San Andreas Fault was the Fort Tejon earthquake in 1857, which likely  
36 caused a surface rupture of at least 200 miles. This is an active fault capable of strong earthquakes  
37 in the region (Petra Geotechnical, 2012). The project site is located approximately 22 miles north  
38 of the fault.

1 **White Wolf Fault**

2 The White Wolf Fault is a southeast-northwest-trending reverse fault with a length of  
3 approximately 45 miles. The White Wolf Fault ruptured on July 21, 1952, causing an earthquake  
4 with a magnitude of 7.5 and a series of aftershocks. The 1952 earthquake is the only event recorded  
5 in historic time (Petra Geotechnical, 2012). The project site is located approximately 32 miles  
6 southeast of the fault.

7 **Mojave Desert Northwest-Trending Faults**

8 Northwest-trending lateral strike-slip faults are fairly common in the project region in the western  
9 Mojave. A group of relatively small faults, including the Tyler Horse, Willow Springs, and  
10 Cottonwood Faults, lies approximately 9 miles southwest of the project site. Given the size of these  
11 faults, they are not as likely as the northwest-trending faults to the east of the site to produce large  
12 earthquakes. The northwest trending faults located to the east of the site include the Lockhart Fault  
13 (23 miles northeast of the site), the Mirage Valley Fault (18 miles to the southeast), the Leuhman-  
14 Kramer Hills Fault (18 miles to the east) and the Blake Ranch Fault (21 miles to the southeast).  
15 This eastern fault group may be capable of generating earthquakes similar to the 1999 Hector Mine  
16 and the 1992 Landers earthquakes (Petra Geotechnical, 2012).

17 **Local Geological Setting Hazards**

18 **Soils and Topography**

19 The proposed project soils are composed of silty sand and finer grained soils. The project sites are  
20 relatively flat with areas of 0 to 5 percent slope and drainage to the east. With a maximum slope of  
21 5 percent; landslides are not anticipated to occur due to the sites' flat topography (Appendix B9,  
22 Petra Geotechnical, 2012).

23 **Fault Rupture**

24 Ground surface rupture occurs along an earthquake fault when movement on a fault deep within  
25 the earth breaks through to the surface. Fault ruptures almost always occur along the surface  
26 expression of identified traces of active faults within zones of weakness. Rupture may occur  
27 suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more  
28 damaging to structures because they are accompanied by ground shaking. Fault creep is the slow  
29 rupture of the earth's crust.

30 The site is not located within a currently delineated state of California Alquist-Priolo Earthquake  
31 Fault Zone, and no known active or potentially active faults have been identified onsite. The state  
32 of California defines an active fault as one that has experienced displacement in the last 11,000  
33 years, and a potentially active fault as one has experienced displacement in the last 2.6 million  
34 years; potentially active faults are not placed in Alquist-Priolo Fault Zone Study Areas as shown in  
35 **Figure 3.7-1, Alquist Priolo Fault Zones in the Project Site Vicinity**. Therefore, the potential for  
36 active fault rupture at the project site is considered low

37 **Seismic Hazards**

38 Seismicity is the geographic and historical distribution of earthquakes, including their frequency,  
39 intensity, and distribution. Seismic hazards include surface rupture, ground shaking, liquefaction,  
40 landslides, subsidence, expansive soils, and soil erosion. As described above, the western and the

1 southern end of the San Joaquin Valley is bordered by major active fault systems, making Kern  
2 County a historically active seismic area. The Kern County General Plan provides fault locations  
3 and policies and implementation measures for seismic hazards. Because of the numerous geologic  
4 fractures in the earth’s crust within the San Joaquin Valley, all development within the valley  
5 floor area of Kern County is subject to seismic hazards. The proposed project is not located in the  
6 San Joaquin Valley.

7 **Ground Shaking**

8 The southern California region is characterized by, and has a history of fault stress and associated  
9 seismic activity, including ground shaking, which can result in damage associated with ground  
10 lurching, structural damage, and liquefaction. During a seismic event, the project site may be  
11 subjected to high levels of ground shaking due to proximity to active faults in the area. The type  
12 and magnitude of seismic hazards affecting the project site would be dependent on the distance to  
13 causative faults, and the intensity and magnitude of the seismic event. Earthquakes are classified  
14 by their magnitude, which is a measure of the amount of energy released during an event that can  
15 suggest how much ground shaking it will generate. The largest faults in the area are the San Andreas  
16 and Garlock Faults, which are both considered active.

17 **TABLE 3.7-2**  
18 **CHARACTERISTICS AND ESTIMATED EARTHQUAKES FOR REGIONAL FAULTS**

Earthquake (Fault)	Approximate Distance to Proposed Project (miles/kilometers)	Maximum Credible Earthquake Magnitude
Garlock	11/17.7	6.9
San Andreas	22/35.4	8.0

Source: Petra Geotechnical, Inc., 2012

19 **Expansive Soils**

20 Expansive soils are characterized by their potential “shrink-swell” behavior. Shrink-swell is the  
21 cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay  
22 sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite,  
23 montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture  
24 content. The near-surface soils observed at the proposed solar facility include loamy sands, sandy  
25 loams, gravelly clay loams, and clay loams (NRCS, 2017). Clay-type soils may be expansive. Based  
26 on the sandy alluvium at the site, the potential for expansive soil at the site is considered to be low.  
27 However, based on the National Resources Conservation Service (NRCS) soil description, soils in  
28 the west-central portion of the site may contain some clay and may have a higher potential for  
29 expansion.

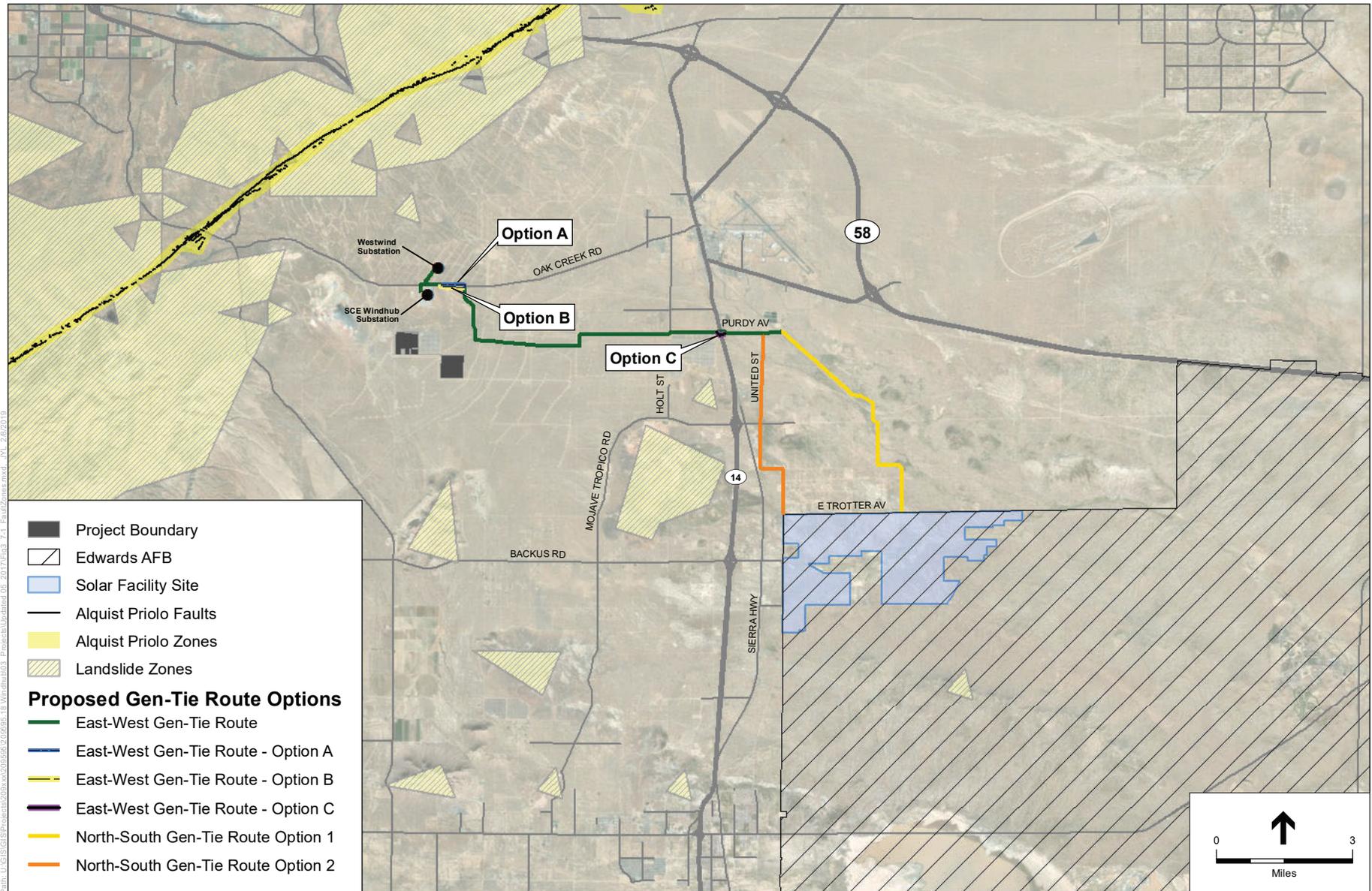


Figure 3.7-1: ALQUIST PRIOLO FAULT ZONES IN THE PROJECT SITE VICINITY

1     **Liquefaction**

2     Liquefaction generally occurs when saturated, loose materials (e.g., sand or silty sand) are  
3     weakened and transformed from a solid to a near-liquid state as a result of increased pore water  
4     pressure. The increase in pressure is caused by strong ground motion from an earthquake. The  
5     project site’s susceptibility to liquefaction is a function of depth, density, groundwater level, and  
6     magnitude of an earthquake. Liquefaction-related phenomena can include lateral spreading, ground  
7     oscillation, flow failure, loss of bearing strength, subsidence, and buoyancy effects.

8     For liquefaction to occur, the soil must be saturated (e.g., with shallow groundwater) and be  
9     relatively loose. Liquefaction more often occurs in areas underlain by young alluvium where the  
10    groundwater table is higher than 50 feet below ground surface (bgs). The project site is located in  
11    the Closter Subbasin of the Antelope Valley Groundwater Basin, where bedrock barriers contribute  
12    to a more shallow depth of groundwater compared to deeper levels in the Antelope Valley to the  
13    south of the project site. A well on the western portion of the site recorded a depth to groundwater  
14    of approximately 49 feet bgs in 2010, and its shallowest record is 33 feet bgs in 1956 (Petra  
15    Geotechnical, 2012). Based on review of available groundwater data in the site vicinity,  
16    groundwater is reported to be historically shallow and there is a potential for liquefaction at the  
17    project site.

18    **Landslides**

19    Various general types of ground failures that might occur as a consequence of severe ground  
20    shaking at the site include landsliding, ground subsidence, and ground lurching. The probability of  
21    occurrence of each type of ground failure depends on the severity of the earthquake, distance from  
22    faults, topography, subsoils, and groundwater conditions, in addition to other factors. Based on the  
23    site conditions and gently sloping topography, the potential for landslides is considered unlikely at  
24    the site (Petra Geotechnical, 2012).

25    **Local Setting**

26    The project site (solar facility and gen-tie corridor) is located in a relatively flat alluvial plain  
27    surrounded by low hills and buttes with a gentle eastern slope where drainage flows to the east.  
28    Only a few minor drainage channels are located within the project area. The project site is underlain  
29    by quaternary alluvium, with an isolated outcrop of exposed granitic rock near the western edge of  
30    the site. Granitic rock may also be present along the eastern edge of the site near the Bissel Hills.  
31    Observations from the site suggest that the local alluvium is made up primarily of silty sand,  
32    although soils may be finer grained in the central portion of the site (Petra Geotechnical, 2012).

33    The project area designated for solar panel development on Edwards AFB is not located on land  
34    designated as an MRZ. However, the preliminary off-base gen-tie routing options are located on  
35    land designated as MRZ-3a (Au) and MRZ-3b (Au-3), which is defined as “areas containing  
36    mineral deposits the significance of which cannot be evaluated from available data.” The closest  
37    mine to the proposed project is the Pauley D.G. Mine, roughly 2.5 miles away.

## 3.7.2 Environmental Consequences

This section of the EIS/EIR describes the environmental consequences relating to geology, minerals, and soils for the proposed project. It describes the methods used to determine the effects of the proposed project and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e, avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

### 3.7.2.1 Assessment Methods/Methodology

The analysis of potential impacts of the Proposed Action and alternatives regarding geology, minerals, and soils focuses on possible impacts to the health and safety of the public and the environment. Impacts are identified and evaluated based on relevant lead agency standards, policies, and guidelines. Information regarding geology, minerals, and soils were reviewed for this analysis, including the following:

- Preliminary Geotechnical Report (Petra Geotechnical, 2012)
- National Resources Conservation Service, Web Soil Survey (NRCS, 2017)
- Mineral Land Classification of Southeastern Kern County (Koehler, 1999)

The analysis presents the evaluation of the potential for the proposed project to create risks or cause direct or indirect impacts to related to its geological and mineralogical setting. This analysis was conducted by examining preliminary geotechnical data, Kern County Planning documents, geographical information systems, and publicly available natural resource maps as noted above.

### 3.7.2.2 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was significant related to geology, minerals, and soils if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15064.7 (a)), and standards of professional practice. A project would have a significant impact on geology, minerals, and soils if it would:

- Expose people or structures to 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
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.

- 1 • Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code  
2 (1994), creating substantial risk to life or property.
- 3 • Have soils incapable of adequately supporting the use of septic tanks or alternative waste  
4 water disposal systems where sewers are not available for the disposal of waste water.

5 Similarly, a project would have a significant adverse effect on mineral resources if it would:

- 6 • Result in the loss of availability of a known mineral resources that would be of value to the  
7 region and the residents of the state.
- 8 • Result in the loss of availability or a locally important mineral resource recovery site  
9 delineated on a local General Plan, Specific Plan, or other land use plan.

10 The County determined in the NOP (see Appendix A) that the following environmental issue area  
11 would result in no impacts or less-than-significant impacts and it was therefore scoped out of  
12 requiring further review in this EIS/EIR.

- 13 • Expose people or structures to potential substantial adverse effects, including the risk of  
14 loss, injury, or death, involving landslides.

### 15 3.7.3 Analysis of Environmental Effects

#### 16 3.7.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### 17 ***NEPA: Environmental Impacts***

##### 18 **Construction**

19 The project site is located in a highly seismic region within the influence of several fault systems,  
20 including the San Andreas and Garlock Fault systems, which are capable of generating ground  
21 motions that could affect the project area. The developer is required to design project infrastructure  
22 to withstand substantial ground shaking in accordance with applicable California Building Code  
23 seismic design standards, Kern County Building Code, Chapter 17.08, and as recommended by a  
24 California registered professional engineer in the required site-specific geotechnical review.

25 Prior to the issuance of grading permits, the developer would be required to retain a qualified  
26 geotechnical engineer to design the project facilities to withstand probable seismically induced  
27 ground shaking at the site in accordance with local and state building code requirements. All  
28 grading and construction onsite would adhere to the specifications, procedures, and site conditions  
29 contained in the final design plans, which would be fully compliant with the seismic  
30 recommendations of a California-registered professional engineer in accordance with California  
31 and Kern County Building Code requirements. The required measures would encompass site  
32 preparation, foundation specifications, and corrosion protection measures for buried metal. The  
33 final gen-tie structural design would be subject to approval and follow-up inspection by the Kern  
34 County Public Works Department and by the Air Force for the solar facility. Final design  
35 requirements would be provided to the onsite construction supervisor and the Kern County Building  
36 Inspector to ensure compliance. A copy of the approved design would be submitted to the Kern  
37 County Planning and Natural Resources Department. Implementation of these building code

1 requirements and local agency enforcement would reduce impacts from ground shaking to less than  
2 significant.

3 Construction of the proposed project would involve earthwork activities that could expose soils to  
4 erosion. The proposed project is located on relatively flat topography and would not involve  
5 grading steep slopes; however, earthmoving and construction activities could loosen soil, and the  
6 removal of vegetation could contribute to soil loss and erosion by wind and stormwater runoff. The  
7 requirements of the Kern County NPDES Program provide that a SWPPP would be prepared and  
8 implemented. The SWPPP would specify BMPs to prevent disturbed soils (such as topsoil), from  
9 moving offsite. Also, pursuant to the Kern County Grading Ordinance (Section 17.28.070), the  
10 developer would be required to submit grading plans accompanied by a soils engineering report,  
11 engineering geology report, and drainage calculations in order to obtain required grading permits.  
12 Permit requests for grading are submitted to the Kern County Public Works Department for  
13 discretionary review and approval once all requirements have been satisfactorily met. Given the  
14 relatively flat nature and pervious surface of the project site, it is unlikely that soil erosion from  
15 water runoff would occur with implementation of the construction SWPPP and the required BMPs.  
16 As a result, the proposed project would have no adverse effects related to erosion.

17 Because of the flat topography of the solar facility site, it is anticipated that minimal grading would  
18 be required to prepare the site for photovoltaic (PV) modules. To the extent possible, existing  
19 topsoil would likely be left in place. However, it is anticipated that vegetation removal could be  
20 necessary for trenching utilities and road construction. However, where grading is necessary,  
21 conventional grading would be performed throughout the project site in accordance with County  
22 grading requirements to facilitate proper drainage. Earthworks scrapers, paddlewheels, haul  
23 vehicles, and graders may all be used to perform grading. Perimeter and access roads may be  
24 additionally compacted to 90 percent or greater, as required to support construction and emergency  
25 vehicles. The grading would be balanced onsite. It is anticipated that up to 400 acre-feet  
26 (130,340,571 gallons) of water would be used during construction of the solar facility.

### 27 **Operation and Maintenance**

28 The final PV array, gen-tie line, and associated infrastructure would be located in the highly seismic  
29 southern California region within the influence of several fault systems, including the San Andreas  
30 and Garlock Fault systems. However, the site is not located within a state of California Alquist-  
31 Priolo Earthquake Fault Zone. The nearest active fault to the project site is the Garlock Fault, which  
32 is approximately 11 miles away. Within the project site, there is an absence of any known active  
33 faults that cross or come anywhere near the project site, there would be no adverse effects related  
34 to fault rupture (Petra Geotechnical, 2012).

35 Groundwater in the area of the project site has been shown to be as high as 33 feet below ground  
36 surface in 1956 but based on regional trends is likely much deeper today. The required site-specific  
37 geotechnical investigation of the site would include an evaluation for the presence of liquefaction  
38 and also include measures to mitigate any liquefiable soils, if present.

39 The site is not located in an area undergoing fluid withdrawal that could generate a potential  
40 subsidence effect. While the project could include sourcing underlying groundwater resources for

1 panel washing, these uses would be temporary and periodic such that subsidence would not be  
2 anticipated. Water could also be supplied from offsite sources and trucked onsite

3 The cleaning operations would likely occur three to four times per year; however, this is not  
4 expected to result in soil erosion because of the infrequency of cleaning activities, drainage control  
5 design, and site characteristics (e.g., flat topography and pervious surface). It is anticipated that up  
6 to 30 acre-feet per year (AFY) of water would be used for operations and maintenance activities.  
7 No adverse effects related to erosion are expected to occur during the operational phase of the  
8 proposed project.

9 However, unconsolidated alluvial sediments may have a potential for settlement and/or soil  
10 collapse if proposed improvements are not designed appropriately. The proposed project is required  
11 to comply with California and Kern County Building Code requirements to withstand the effects  
12 of settlement or collapsible soils. With adherence to all applicable building code regulations, the  
13 project would avoid potential impacts to structures resulting from unstable soils, and no adverse  
14 effects would be expected.

15 The operational phase of the proposed project could include service buildings and warehouses. This  
16 facility could include development of a septic system. Wastewater generated during operation is  
17 not expected to be significant because the project would only require up to 10 full-time employees.  
18 Soils onsite could have expansive qualities potentially impacting operation of the proposed septic  
19 system. The preliminary geotechnical investigation concluded that soils comprise a mixture of  
20 clayey and sandy soils that may be expansive. The proposed project would be required to be  
21 designed to comply with California and Kern County Building Code requirements to withstand the  
22 effects of expansive soils (Petra Geotechnical, 2012). With adherence to all applicable building  
23 code regulations, the project would avoid impacts resulting from potentially expansive soils on the  
24 project site, and no adverse effects related to expansive soils would be expected.

25 The project site is not designated as a mineral recovery area by the Kern County General Plan, nor  
26 is it zoned for or immediately adjacent to lands designated as Mineral and Petroleum areas by the  
27 Kern County General Plan. Both the solar facility and the gen-tie route sites are classified as MRZ-  
28 3 by the Department of Conservation Mining and Geology Board, which is defined as “areas  
29 containing mineral deposits the significance of which cannot be evaluated from available data”  
30 (Petra Geotechnical, 2012). Due to the abundance of similar mineralogical materials in the  
31 surrounding desert region around the project site, the potential of the project to result in the loss of  
32 availability of a known mineral resource is not anticipated and no adverse effects would occur.

33 Additionally, the nearest mine is the Pauley D.G. Mine located approximately 2.5 miles southwest  
34 of the site. At this distance, the proposed project would not interfere with any existing mining  
35 operations at the mine, and would not result in the loss of land designated for mineral and  
36 petroleum. Also, based on the absence of historical surface mining in the area, the potential for  
37 surface mining at the site is considered extremely low. As such, the project would not result in the  
38 loss of availability of a known mineral resource and no adverse effects to future mineral resources  
39 are anticipated.

1 The site is not located on land designated for mineral resources by the Kern County General Plan  
2 or any of the applicable specific plans. Implementation of the proposed project would not directly  
3 or indirectly conflict with any local general plan, specific plan, or other land use plan. In addition,  
4 because the life expectancy of the project is approximately 35 years, access to any mineral resources  
5 that may be identified at the site in the future would not be permanently lost or impacted, and the  
6 proposed project would not result in a significant impact.

### 7 **Decommissioning**

8 At the completion of the lease, a decommissioning environmental impact analysis will be  
9 completed to assess how all site improvements will be dismantled and removed from the site  
10 consistent with the lease and environmental requirements in place at the time of decommissioning.  
11 Upon decommissioning, the solar site could be converted to other uses in accordance with  
12 applicable land use regulations in effect at that time.

### 13 **CEQA: Impact Significance Determination**

14 **Impact 3.7-1: The project would expose people or structures to potential substantial adverse**  
15 **effects, including the risk of loss, injury, or death involving rupture of a known earthquake**  
16 **fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued**  
17 **by the State Geologist for the area or based on other substantial evidence of a known fault.**

18 Primary ground rupture is ground deformation that occurs along the surface trace of the causative  
19 fault during an earthquake. The proposed project would introduce structures and people to the  
20 project site and could thus expose people and structures to seismic risks. While the project site is  
21 located in a highly seismic southern California region within the influence of several fault systems,  
22 it is not transected by a known active or potentially active fault and is not located within a State of  
23 California Alquist-Priolo Earthquake Fault Zone. The nearest active fault to the project site is the  
24 Garlock Fault, which is located approximately 12 miles to the northwest of the solar facility site.  
25 Due to the distance from the nearest active fault to the project site, the potential for surface fault  
26 rupture at the project site is considered negligible. Implementation of Mitigation Measure MM 3.7-  
27 1a for the solar facility portion of the project site would require the preparation of a geotechnical  
28 study. The gen-tie portion of the project requires no mitigation, only compliance with seismic safety  
29 requirements. Both of these requirements would ensure that impacts remain less than significant.

### 30 **Mitigation Measures**

31 Implement Mitigation Measures MM 3.7-1a, (see Section 3.7.5 for mitigation measures).

### 32 **Level of Significance**

33 Impacts would be less than significant.

34 **Impact 3.7-2: The project would expose people or structures to potential substantial adverse**  
35 **effects, including the risk of loss, injury, or death involving strong seismic ground shaking.**

36 With implementation of Mitigation Measures MM 3.7-1b for the solar facility and MM 3.7-2b for  
37 the gen-tie portion of the project site, the developer would be required to design project  
38 infrastructure to withstand substantial ground shaking in accordance with applicable California  
39 Building Code seismic design standards, Kern County Building Code, Chapter 17.08, and as

1 recommended by a California registered professional engineer in the site-specific geotechnical  
2 review.

3 Prior to the issuance of grading permits, the developer would be required to retain a qualified  
4 geotechnical engineer to design the project facilities to withstand probable seismically induced  
5 ground shaking at the sites. All grading and construction onsite would adhere to the specifications,  
6 procedures, and site conditions contained in the final design plans, which would be fully compliant  
7 with the seismic recommendations by the California-registered professional engineer in accordance  
8 with California and Kern County Building Code requirements. The required measures would  
9 encompass site preparation, foundation specifications, and protection measures for buried metal.  
10 The Kern County Public Works Department would require submittal of three sets of plans for  
11 building department review prior to issuance of a building permit. The final structural design would  
12 be subject to approval and follow-up inspection by the Kern County Building Inspection  
13 Department. Final design requirements would be provided to the onsite construction supervisor and  
14 the Kern County Building Inspector to ensure compliance. A copy of the approved design would  
15 be submitted to the Kern County Planning and Community Development Department.  
16 Implementation of these building code requirements and local agency enforcement would reduce  
17 impacts from ground shaking to less than significant.

#### 18 **Mitigation Measures**

19 Implement Mitigation Measures MM 3.7-1b and MM 3.7-2b (see Section 3.7.5 for mitigation  
20 measures).

#### 21 **Level of Significance**

22 Impacts would be less than significant.

23 **Impact 3.7-3: The project would expose people or structures to potential substantial adverse**  
24 **effects, including the risk of loss, injury, or death involving seismic related ground failure,**  
25 **including liquefaction.**

26 All structures constructed as part of the project would be required to comply with applicable  
27 California and Kern County Building Code earthquake construction standards. Mitigation Measure  
28 3.7-1 requires preparation of a Phase II geotechnical evaluation to determine the appropriate  
29 structural design required to avoid potential liquefaction impacts. With adherence to all applicable  
30 regulations, including Kern County Building Code requirements and with implementation of  
31 Mitigation Measures MM 3.7-1a for the solar facility portion of the project site, and MM 3.7-1b  
32 and MM 3.7-3b for the gen-tie portion of the project site, the project would avoid impacts related  
33 to liquefaction, and potential impacts would be less than significant.

#### 34 **Mitigation Measures**

35 Implement Mitigation Measure MM 3.7-1a, MM 3.7-1b, and MM 3.7-3b (see Section 3.7.5 for  
36 mitigation measures)

#### 37 **Level of Significance**

38 Impacts would be less than significant.

1 **Impact 3.7-4: The project would result in substantial soil erosion or the loss of topsoil.**

2 Construction of the proposed project would involve earthwork activities including vegetation and  
3 debris removal, grading, excavation and trenching, that could expose soils to erosion. The proposed  
4 solar facility and gen-tie line are located on relatively flat topography and would not involve  
5 grading steep slopes; however, earthmoving and construction activities could loosen soil, and the  
6 removal of vegetation could contribute to soil loss and erosion by wind and stormwater runoff. The  
7 requirements of the Kern County NPDES Program provide that a SWPPP would be prepared and  
8 implemented. The SWPPP would specify BMPs to prevent disturbed soils (such as topsoil), from  
9 moving offsite. Also, pursuant to the Kern County Grading Ordinance (Section 17.28.070), the  
10 proposed project would be required to submit grading plans accompanied by a soils engineering  
11 report, engineering geology report, and drainage calculations in order to obtain required grading  
12 permits. Permit requests for grading are submitted to the Kern County Public Works Department  
13 for discretionary review and approval once all requirements have been satisfactorily met. Given the  
14 relatively flat nature and pervious surface of the project site, it is unlikely that soil erosion from  
15 water runoff would occur with implementation of the construction SWPPP and the required BMPs.  
16 As a result, the proposed project would have less than significant impacts related to erosion.

17 Project operation would include cleaning the solar panels three to four times a year with water  
18 and would require approximately 30 acre-feet per year (AFY).; however, this is not expected to  
19 result in soil erosion because of the infrequency of water use and site characteristics (e.g., flat  
20 topography and pervious surface). No impacts are expected to occur during the operational phase  
21 of the proposed project.

22 **Mitigation Measures**

23 Implementation of Mitigation Measures MM 3.7-4b is required.

24 **Level of Significance**

25 Impacts would be less than significant.

26 **Impact 3.7-5: The project is located on a geologic unit or soil that is unstable, or that would**  
27 **become unstable as result of the project, and potentially result in onsite or offsite landslide,**  
28 **lateral spreading, subsidence, liquefaction, or collapse.**

29 The project site is located on a flat alluvial fan and surface soils include loose soils. Because of the  
30 generally flat topography on and adjacent to the project site, there is no potential for landslides to  
31 occur, and because of building code requirements, the project would be designed to avoid effects  
32 of liquefaction or lateral spreading. Additionally, the site is not located in an area undergoing fluid  
33 withdrawal that could generate a potential subsidence effect.

34 However, unconsolidated alluvial sediments may have a potential for settlement and/or soil  
35 collapse. The gen-tie portion of the proposed project is required to comply with California and Kern  
36 County Building Code requirements to withstand the effects of settlement or collapsible soils. With  
37 adherence to all applicable building code regulations, as well as implementation of Mitigation  
38 Measures MM 3.7-1b and MM 3.7-4b for the gen-tie portion of the project site, which would  
39 require preparation of a Soil Erosion and Sedimentation Control Plan, the project would avoid

1 potential impacts to structures resulting from unstable soils, and potential impacts would be less  
2 than significant.

### 3 **Mitigation Measures**

4 Implementation of Mitigation Measures MM 3.7-1b and MM 3.7-4b.

### 5 **Level of Significance**

6 Impacts would be less than significant.

7 **Impact 3.7-6: The project is located on expansive soil, as defined in Table 18-1-B of the**  
8 **Uniform Building Code (1994), creating substantial risks to life or property.**

9 Expansive soils are fine-grained soils (generally high-plasticity clays) that can undergo a significant  
10 increase in volume with an increase in water content and a significant decrease in volume with a  
11 decrease in water content. Changes in the water content of a highly expansive soil can result in  
12 severe distress to structures constructed on or against the soil. The mineralogy and percentage of  
13 clay-sized particles present in soil determine the potential for expansive behavior. The preliminary  
14 geotechnical investigation concluded that soils comprise a mixture of clayey and sandy soils that  
15 may be expansive. The proposed project is required to be designed to comply with California and  
16 Kern County Building Code requirements to withstand the effects of expansive soils. With  
17 adherence to all applicable building code regulations, as well as implementation of Mitigation  
18 Measures MM 3.7-1b through MM 3.7-4b for the gen-tie portion of the site, the project would avoid  
19 impacts resulting from potentially expansive soils on the project site and along the gen-tie line  
20 route, and impacts related to expansive soils would be less than significant.

### 21 **Mitigation Measures**

22 Implement Mitigation Measures MM 3.7-1b through MM 3.7-4b (see Section 3.7.5 for mitigation  
23 measures).

### 24 **Level of Significance**

25 Impacts would be less than significant.

26 **Impact 3.7-7: The project has soils incapable of adequately supporting the use of septic tanks**  
27 **or alternative wastewater disposal systems in areas where sewers are not available for the**  
28 **disposal of wastewater.**

29 The project may include structures to accommodate onsite employees that would require  
30 wastewater disposal. A solar facility septic system and leach field would be constructed to comply  
31 with applicable requirements of the Kern County Environmental Health Services Division. The  
32 Environmental Health Services Division's "Standards for Land Development" include the aspects  
33 of sewage and preservation of environmental health. The standards are intended to safeguard the  
34 public health, and are enforced by the County's Environmental Health Division. Mitigation  
35 Measure 3.7-2a requires that a site-specific soil permeability report be prepared for the solar facility  
36 portion of the project site, prior to project approval to evaluate the feasibility of using individual  
37 sewage disposal systems, in accordance with the standards of good public health and engineering  
38 practices. No permanent restroom facilities would be required for the gen-tie route construction.

1 With implementation of Mitigation Measure MM 3.7-2a during facility construction impacts would  
2 be less than significant.

3 **Mitigation Measures**

4 Implement Mitigation Measure 3.7-2a (see Section 3.7.5 for mitigation measures).

5 **Level of Significance**

6 Impacts would be less than significant.

7 **Impact 3.7-8: The project would result in the loss of availability of a known mineral resource**  
8 **that would be of value to the region and the residents of the state.**

9 The project site is not zoned as a mineral recovery area by the Kern County Zoning Ordinance ,  
10 nor is it identified as being located in an MRZ by the State Geologist or the Kern County General  
11 Plan. The closest land designated as 8.4, Mineral and Petroleum Resources, is located roughly 1.2  
12 miles northwest of the solar facility site and roughly 0.75 miles west of the gen-tie route.

13 There are active mines and petroleum extraction facilities located near the project site. The closest  
14 is the Pauley D.G. Mine, located approximately 2.5 miles to the southwest. Development of the  
15 proposed solar facility would occur within the boundaries of the project site and would not preclude  
16 use or access to the Pauley D.G. Mine or any other mining or petroleum extraction facilities. As a  
17 result, the proposed project would not interfere with nearby mineral extraction operations, and  
18 would not result in the loss of land designated for mineral resources. Also, based on the absence of  
19 historical surface mining in the area, the potential for surface mining at the site is considered  
20 extremely low. As such, the project would not result in the loss of availability of a known mineral  
21 resource and the potential impact to future mineral resources is less than significant.

22 There are no known mineral resources within the project area; therefore, the project would not have  
23 a significant impact on future mineral development. The installation of PV panels on the site would  
24 not preclude future onsite mineral resource development, should the site be determined to contain  
25 mineral resources in the future.

26 **Mitigation Measures**

27 No mitigation measures are required.

28 **Level of Significance**

29 Impacts would be less than significant.

30 **Impact 3.7-9: The project would result in the loss of availability of a locally important mineral**  
31 **resource recovery site delineated on a local general plan, specific plan or other land use plan.**

32 The project site contains no locally important mineral resource recovery sites delineated in the Kern  
33 County General Plan, Mojave Specific Plan, South of Mojave-Elephant Butte Specific Plan, West  
34 Edwards Road Settlement Specific Plan, or Actis Interim Rural Community Plan. Furthermore, the  
35 installation of PV panels and gen-tie line would not preclude future onsite mineral resource

1 development, should the site be determined to contain mineral resources in the future. Therefore,  
2 loss of availability of mineral resources impacts would be less than significant.

### 3 **Mitigation Measures**

4 No mitigation measures are required.

### 5 **Level of Significance**

6 Impacts would be less than significant.

## 7 **3.7.3.2 Alternative B: 1,500-Acre EUL**

### 8 ***NEPA: Environmental Impacts***

#### 9 **Construction**

10 Construction of Alternative B would result in the same impacts to geology, minerals, and soils as  
11 described for Alternative A. However, because of the reduced size of this alternative, the  
12 geographic area within Alternative B would be smaller than for Alternative A, which would limit  
13 the area within which soil and mineral resources could be impacted and geologic hazards could  
14 occur. The amount of surface soils that would be disturbed under this alternative would be reduced  
15 compared to Alternative A. Consequently, these impacts associated with the construction of  
16 Alternative B would be reduced relative to Alternative A.

#### 17 **Operation and Maintenance**

18 Alternative B would result in the same impacts to geology, minerals, soils, and seismic hazards as  
19 described in Alternative A. However, because of the reduced size of this alternative, the geographic  
20 area within Alternative B would be smaller than for Alternative A. The improvements proposed  
21 under Alternative B would be required to adhere to the same building code requirements that would  
22 account for any changes that might exist in the geotechnical characteristics between the two areas.  
23 Therefore, this smaller size would limit the area within which geotechnical hazards and their  
24 impacts to the public, workers, and the environment could result, but they would still be accounted  
25 for in the site-specific building code requirements. Overall, these impacts associated with the  
26 operation and maintenance of Alternative B would be reduced relative to Alternative A.

#### 27 **Decommissioning**

28 Alternative B would undergo the same decommissioning process as Alternative A. However,  
29 because of the reduced size of this alternative, the geographic area within Alternative B would be  
30 smaller than for Alternative A. This smaller size would limit the area within which soil and mineral  
31 resources could be impacted and geologic hazards could occur. Consequently, these impacts  
32 associated with the decommissioning operation and maintenance of Alternative B would be  
33 reduced relative to Alternative A.

### 34 ***CEQA: Impact Significance Determination***

35 Because Alternative B would result in approximately one-third the physical development of  
36 Alternative A, it is likely that this alternative would result in reduced impacts to geology, minerals,  
37 and soils. However, because the construction and operation of the facility would remain the same  
38 as in Alternative A, the significance conclusions for the impacts identified for each phase of

1 Alternative B (construction, operation and maintenance, decommissioning) would be the same as  
2 described above for Alternative A. Impacts relating to geology, minerals, and soils would be less  
3 than significant.

#### 4 **Mitigation Measures**

5 Implementation of Mitigation Measures MM 3.7-1b through MM 3.7-4b and MM 3.7-2a.

#### 6 **Level of Significance**

7 Impacts would be less than significant.

### 8 **3.7.3.3 Alternative C: No Action/No Project**

#### 9 ***NEPA: Environmental Impacts***

##### 10 **Construction**

11 Under this alternative, none of the components proposed under Alternative A would be built. If  
12 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
13 environmental setting as described above. There would be no construction, grading, or employees  
14 on the site; therefore, there would be no potential for impacts to geology, minerals, or soils to occur.  
15 Thus, Alternative C would not substantially affect geology, minerals, and soil during the  
16 construction, operation and maintenance, and decommissioning phases.

##### 17 ***CEQA: Impact Significance Determination***

18 Alternative C would result in no impacts concerning geologic risk factors, soils, or mineral  
19 resources.

#### 20 **Mitigation Measures**

21 No mitigation measures are required.

#### 22 **Level of Significance**

23 No Impact.

### 24 **3.7.4 Cumulative Impact Analysis**

#### 25 **3.7.4.1 NEPA: Cumulative Environmental Effects and Their** 26 **Significance**

27 All of the cumulative projects listed in Table 3-1 would be subject to relatively similar seismic  
28 hazards with some of the projects located to the north possibly having slightly higher risks due to  
29 their closer proximity to the Garlock fault. However, all of these projects, which consist primarily  
30 of other solar and wind energy projects, would be required to comply with the CBC, and other  
31 applicable safety regulations. All of the cumulative projects identified in Table 3-1 would result in  
32 less than significant impacts similar to the proposed project due to compliance with local and state  
33 building code compliance as well as local grading ordinances and permit requirements. The  
34 significance determination is based on the fact that seismic and other geotechnical hazards such as  
35 subsidence, expansive soils, and other unstable soil conditions are site-specific and cannot be  
36 combined to cause cumulatively significant effects from geologic impacts. Consequently, the

1 Proposed Action would generally not be affected by, nor would the project affect, other  
2 development approved by Kern or Los Angeles Counties nor the Cities of Lancaster or Palmdale.  
3 The incremental contribution of the proposed project to cumulative geologic impacts would not be  
4 cumulatively considerable.

5 Development of the project, with implementation of the regulatory requirements discussed above,  
6 would not result in adverse impacts related to exposing persons or structures to geologic, soils, or  
7 seismic hazards. Although the entire region is a seismically active area, geologic and soil conditions  
8 vary widely within a short distance, making the cumulative context for potential impacts resulting  
9 from exposing people and structures to related risks one that is more localized or even site specific.  
10 Similar to the Proposed Action, other projects in the area would be required to adhere to the same  
11 California and Kern County Building Codes, for example, which would reduce the risk to people  
12 and property to less than significant levels. While future seismic events cannot be predicted,  
13 adherence to all federal, state, and local programs, requirements, and policies pertaining to building  
14 safety and construction would limit the potential for injury or damage to a less-than-significant  
15 level. Therefore, the project, combined with past, present, and other foreseeable development in  
16 the area, would not result in a cumulative adverse impacts related to exposure of people or  
17 structures to risk related to geologic hazards, soils, and/or seismic conditions.

18 As previously discussed, there are no known mineral resources within either the solar facility or  
19 the gen-tie route area; therefore, the project would not have a significant impact on future mineral  
20 development. In addition, the installation of PV panels on the site would not preclude future onsite  
21 mineral resource development, should the site be determined to contain mineral resources in the  
22 future. The vast majority of the cumulative projects identified in Table 3-1 would also be required  
23 to comply with applicable land use designations and their associated soil and mineral resource  
24 considerations. Therefore, the proposed solar facility and gen-tie routes would not significantly  
25 contribute to impacts on soil or mineral resources in the cumulative scenario.

26 The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably  
27 foreseeable land use conditions in the region. The vast majority of the cumulative projects identified  
28 in Table 3-1 would be similarly required to comply with applicable codes, standards, and permitting  
29 requirements (e.g., preparation of a SWPPP) to control erosion potential. Development of the  
30 project site has the potential to contribute to soil erosion and loss of topsoil during construction  
31 when soils are potentially exposed to the effects of wind and water erosion. These potential impacts  
32 would be mitigated through the implementation of the SWPPP and BMPs as would the other 90  
33 cumulative projects that disturb more than 1 acre which includes the vast majority. Impacts  
34 associated with erosion are mitigated on a project-by-project basis through compliance with the  
35 aforementioned requirements, which would reduce the overall cumulative impact to a less than  
36 significant level.

#### 37 **3.7.4.2 CEQA: Cumulative Impact Significance Determination**

38 As described above, development of the project, with implementation of the regulatory  
39 requirements discussed above, would not result in adverse cumulative impacts related to geology,  
40 minerals, and soils, largely due to the fact that geologic impacts tend to be site-specific and are not  
41 cumulatively considerable. However, implementation of Mitigation Measures MM 3.7-1b through

1 MM 3.7-4b and MM 3.7-2a would provide additional procedures to ensure that cumulative impacts  
2 would be less than significant.

### 3 Mitigation Measures

4 Implementation of Mitigation Measures MM 3.7-1b through MM 3.7-4b and MM 3.7-2a

### 5 Level of Significance

6 Cumulative impacts would be less than significant.

## 7 3.7.5 Mitigation Measures

### 8 3.7.5.1 Solar Facility Mitigation Measures

9 **MM 3.7-1a: Conduct Geotechnical Study.** Prior to the issuance of building or grading permits  
10 for the project, the project proponent shall conduct a full geotechnical study to evaluate soil  
11 conditions and geologic hazards on the project site and submit it to the Kern County Public Works  
12 Department for review and approval.

- 13 1. The geotechnical study must be signed by a California-registered and licensed professional  
14 engineer and must include, but not limited to, the following:
  - 15 a. Location of fault traces and potential for surface rupture and groundshaking potential;
  - 16 b. Maximum considered earthquake and associated ground acceleration;
  - 17 c. Potential for seismically induced liquefaction, landslides, differential settlement, and  
18 mudflows;
  - 19 d. Stability of any existing or proposed cut-and-fill slopes;
  - 20 e. Collapsible or expansive soils;
  - 21 f. Foundation material type;
  - 22 g. Potential for wind erosion, water erosion, sedimentation, and flooding;
  - 23 h. Location and description of unprotected drainage that could be impacted by the  
24 proposed development; and,
  - 25 i. Recommendations for placement and design of facilities, foundations, and remediation  
26 of unstable ground.
- 27 2. The project proponent shall determine the final siting of project facilities based on the  
28 results of the geotechnical study and implement recommended measures to minimize  
29 geologic hazards. The project proponent shall not locate project facilities on or immediately  
30 adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped  
31 fault trace. Alternatively, a detailed fault trenching investigation may be performed to  
32 accurately locate the fault trace(s) to avoid siting improvements on or close to these fault  
33 structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback  
34 distances can be proposed.
- 35 3. The Kern County Public Works Department shall evaluate any final facility siting design  
36 developed prior to the issuance of any building or grading permits to verify that geological  
37 constraints have been avoided.

38 **MM 3.7-2a: Assess Soil Permeability.** Prior to the issuance of any building permit for the  
39 operation and maintenance facilities, the project proponent shall obtain all required permits and

1 approvals from Kern County Environmental Health Services Division, and shall implement all  
2 required conditions regarding the design and siting of the septic system and leach fields. A site  
3 specific analysis of soil permeability shall be performed by a California licensed Geotechnical  
4 Engineer that demonstrates project soils can adequately support the use of a septic disposal system.  
5 A plan shall be submitted to the Kern County Planning and Natural Resources Department  
6 indicating siting or the septic system and leach fields as approved by the Kern County  
7 Environmental Health Services Division.

### 8 **3.7.5.2 Gen-tie Mitigation Measures**

9 **MM 3.7-1b: Conduct Geotechnical Study.** Prior to the issuance of building or grading permits  
10 for the generation tie-line installation, the project proponent shall conduct a full geotechnical study  
11 to evaluate soil conditions and geologic hazards on the sites and submit it to the Kern County Public  
12 Works Department and Department for review and approval.

- 13 1. The geotechnical study must be signed by a California-registered and licensed professional  
14 engineer and must include, but not limited to, the following:
  - 15 a. Location of fault traces and potential for surface rupture and groundshaking potential;
  - 16 b. Maximum considered earthquake and associated ground acceleration;
  - 17 c. Potential for seismically induced liquefaction, landslides, differential settlement, and  
18 mudflows;
  - 19 d. Stability of any existing or proposed cut-and-fill slopes;
  - 20 e. Collapsible or expansive soils;
  - 21 f. Foundation material type;
  - 22 g. Potential for wind erosion, water erosion, sedimentation, and flooding;
  - 23 h. Location and description of unprotected drainage that could be impacted by the  
24 proposed development; and,
  - 25 i. Recommendations for placement and design of facilities, foundations, and  
26 remediation of unstable ground.
- 27 2. The project proponent shall determine the final siting of project facilities based on the  
28 results of the geotechnical study and implement recommended measures to minimize  
29 geologic hazards. The project proponent shall not locate project facilities on or immediately  
30 adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped  
31 fault trace. Alternatively, a detailed fault trenching investigation may be performed to  
32 accurately locate the fault trace(s) to avoid sighting improvements on or close to these fault  
33 structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback  
34 distances can be proposed.
- 35 3. The Kern County Public Works Department shall evaluate any final generation tie line  
36 siting design developed prior to the issuance of any building or grading permits to verify  
37 that geological constraints have been avoided.

38 **MM 3.7-2b: Comply Seismic Safety Requirements.** Prior to the issuance of grading permits, the  
39 project proponent shall retain a California registered and licensed engineer to design the project  
40 generation tie lines to withstand probable seismically induced ground shaking at the site. All  
41 grading and construction onsite shall adhere to the specifications, procedures, and site conditions

1 contained in the final design plans, which shall be fully compliant with the seismic  
2 recommendations of the California-registered professional engineer.

- 3 1. The procedures and site conditions shall encompass site preparation, foundation  
4 specifications, and protection measures for buried metal.
- 5 2. The final structural design shall be subject to approval and follow-up inspection by the  
6 Kern County Building Inspection Department. Final design requirements shall be provided  
7 to the onsite construction supervisor and the Kern County Building Inspector to ensure  
8 compliance. A copy of the approved design shall be submitted to the Kern County Planning  
9 and Natural Resources Department.

10 **MM 3.7-3b: Generation-Tie Line Grading.** The project proponent shall limit grading to the  
11 minimum area necessary for construction of the generation tie lines. Prior to the initiation of  
12 construction, the project proponent shall retain a California registered and licensed professional  
13 engineer to submit final grading earthwork plans prior to generation tie line construction to the  
14 Kern County Public Works for approval.

15 **MM 3.7-4b: Soil Erosion and Sedimentation Control Plan.** The project proponent shall prepare  
16 a Soil Erosion and Sedimentation Control Plan to mitigate potential loss of soil and erosion. The  
17 plan shall be prepared by a California registered and licensed civil engineer or other authorized  
18 professional and submitted for review and approval by the Kern County Engineering, Surveying  
19 and Permit Services Department.

- 20 1. The Soil Erosion and Sedimentation Control Plan shall include, but is not limited to, the  
21 following:
  - 22 a. Best Management Practices to minimize soil erosion consistent with Kern County  
23 grading requirements and the California Regional Water Quality Control Board  
24 requirements pertaining to the preparation and approval of a Stormwater Pollution  
25 Prevention Plan (Best Management Practices recommended by the Kern County Public  
26 Works Department shall be reviewed for applicability);
  - 27 b. Provisions to maintain flow in washes, should it occur, throughout generation tie-line  
28 construction;
  - 29 c. Provisions for site revegetation using native seed mix;
  - 30 d. Sediment collection facilities as may be required by the Kern County Public Works  
31 Department;
  - 32 e. A timetable for full implementation, estimated costs, and a surety bond or other  
33 security as approved by the County; and
  - 34 f. Other measures required by the County during permitting, including long-term  
35 monitoring (post-construction) of erosion control measures until generation tie-line site  
36 stabilization is achieved.

### 37 3.7.6 Residual Impacts after Mitigation

38 The full evaluation of soil conditions and geologic hazards on the project site will establish  
39 procedures and measures to safeguard and maintain the health, safety, and welfare of the citizens  
40 of the county. No residual impacts after mitigation are anticipated.



## 3.8 Greenhouse Gas Emissions

### 3.8.1 Affected Environment

This section of the EIS/EIR presents the affected environment for greenhouse gas (GHG) emissions in the project area, including the regulatory and environmental settings. It also describes the impacts associated with GHGs that would result from implementation of the project, and, as necessary, mitigation measures that would reduce these impacts. Information in this section is based primarily on the February 2018 memorandum Air Quality and Greenhouse Gas Emissions Methodology and Emissions Calculations (Dudek 2018). This memorandum is presented in Appendix B2 of this EIS/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 U.S. Environmental Protection Agency (USEPA), and the applicable provisions of the California Environmental Quality Act (CEQA).

#### 3.8.1.1 Scoping Issues Addressed

The following scoping comments related to GHG emissions were provided by the Sierra Club and the California State Lands Commission. The following issues and concerns are addressed, where appropriate, in this section:

- A GHG emissions analysis should be included in the EIS/EIR.
- Specific GHG mitigation measures should be included.

#### 3.8.1.2 Regulatory Framework

##### ***Federal***

##### **U.S. Environmental Protection Agency**

The USEPA is responsible for implementing federal policy to address GHGs—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases (sulfur hexafluoride [SF<sub>6</sub>], hydrofluorocarbons [HFC], and perfluorocarbons [PFCs]) (USEPA, 2017). 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-CO<sub>2</sub> 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.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), the United States Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the Clean Air Act (CAA) to regulate GHGs. The Court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On

1 December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under  
2 Section 202(a) of the CAA. First, the USEPA adopted a Final Endangerment Finding for the six  
3 defined GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>). The Endangerment Finding is required  
4 before the USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently  
5 with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute  
6 Finding in which the USEPA Administrator found that GHG emissions from new motor vehicles  
7 and motor vehicle engines are contributing to air pollution, which is endangering public health and  
8 welfare. These findings do not, by themselves, impose any requirements on industry or other  
9 entities. However, these actions were a prerequisite for implementing GHG emissions standards  
10 for vehicles.

11 President George W. Bush signed Executive Order (EO) 13432 on May 14, 2007, directing the  
12 USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a  
13 regulatory process that responds to the Supreme Court's decision. EO 13432 was codified into law  
14 by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the  
15 areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable  
16 buildings, electronics stewardship, fleets, and water conservation. In addition, the order requires  
17 more widespread use of Environmental Management Systems as the framework in which to manage  
18 and continually improve these sustainable practices. This executive order requires federal agencies  
19 to lead by example in advancing the nation's energy security and environmental performance by  
20 achieving the following goals:

- 21 • **Energy Efficiency:** Reduce energy intensity 30 percent by 2015, compared to a fiscal year  
22 (FY) 2003 baseline.
- 23 • **Greenhouse Gases:** Reduce greenhouse gas emissions through reduction of energy  
24 intensity 30 percent by 2015, compared to an FY 2003 baseline.
- 25 • **Renewable Power:** At least 50 percent of current renewable energy purchases must come  
26 from new renewable sources (in service after January 1, 1999).
- 27 • **Building Performance:** Construct or renovate buildings in accordance with sustainability  
28 strategies, including resource conservation, reduction, and use; siting; and indoor  
29 environmental quality.
- 30 • **Water Conservation:** Reduce water consumption intensity 16 percent by 2015, compared  
31 to an FY 2007 baseline.
- 32 • **Vehicles:** Increase purchase of alternative fuel, hybrid, and plug-in hybrid vehicles when  
33 commercially available.
- 34 • **Petroleum Conservation:** Reduce petroleum consumption in fleet vehicles by 2 percent  
35 annually through 2015, compared to an FY 2005 baseline.
- 36 • **Alternative Fuel:** Increase use of alternative fuel consumption by at least 10 percent  
37 annually, compared to an FY 2005 baseline.
- 38 • **Pollution Prevention:** Reduce use of chemicals and toxic materials and purchase lower  
39 risk chemicals and toxic materials.
- 40 • **Procurement:** Expand purchases of environmentally sound goods and services, including  
41 bio-based products.

- 1       • **Electronics Management:** Annually, 95 percent of electronic products purchased must  
2 meet Electronic Product Environmental Assessment Tool standards where applicable;  
3 enable ENERGY STAR features on 100 percent of computers and monitors; and reuse,  
4 donate, sell, or recycle 100 percent of electronic products using environmentally sound  
5 management practices.

6 In the most recent international climate change agreement adopted at the Paris UNFCCC climate  
7 conference in December 2015 (“Paris Accord”), the United States set its intended nationally  
8 determined contribution to reduce its greenhouse gas emissions by 26 to 28 percent below its 2005  
9 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set  
10 with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80  
11 percent emission reduction by 2050 (UNFCCC 2017). However, on June 1, 2017, President Donald  
12 Trump issued a statement announcing that “the United States will cease all implementation of the  
13 non-binding Paris Accord and the draconian financial and economic burdens the agreement  
14 imposes on our country. This includes ending the implementation of the nationally determined  
15 contribution and, very importantly, the Green Climate Fund which is costing the United States a  
16 vast fortune”(The White House 2017)

17 On August 3, 2015, President Obama and the USEPA announced the Clean Power Plan. The Clean  
18 Power Plan sets achievable standards to reduce carbon dioxide emissions by 32 percent from 2005  
19 levels by 2030. (The White House 2016) This Plan establishes final emissions guidelines for states  
20 to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric  
21 generating units (EGUs). Specifically, the USEPA is establishing: (1) carbon dioxide emission  
22 performance rates representing the best system of emission reduction for two subcategories of  
23 existing fossil fuel-fired EGUs, fossil fuel-fired electric utility steam generating units and stationary  
24 combustion turbines; (2) state-specific CO<sub>2</sub> goals reflecting the CO<sub>2</sub> emission performance rates;  
25 and (3) guidelines for the development, submittal and implementation of state plans that establish  
26 emission standards or other measures to implement the CO<sub>2</sub> emission performance rates, which  
27 may be accomplished by meeting the state goals. This final rule would continue progress already  
28 under way in the United States to reduce CO<sub>2</sub> emissions from the utility power sector (. On February  
29 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial  
30 review. In addition, the USEPA is currently proposing to repeal the Clean Power Plan after  
31 completing a thorough review as directed by the executive order on Energy Independence (as  
32 discussed below) (USEPA 2016). In summary, the Clean Power Plan continues to face multiple  
33 legal challenges and its future is uncertain.

34 On March 28, 2017, President Donald Trump signed EO 13783, “Promoting Energy Independence  
35 and Economic Growth,” which calls for:

- 36       • Review of the Clean Power Plan
- 37       • Review of the 2016 Oil and Gas New Source Performance Standards for New,  
38 Reconstructed, and Modified Sources
- 39       • Review of the Standards of Performance for Greenhouse Gas Emissions from New,  
40 Modified, and Reconstructed Stationary Sources: Electric Generating Units
- 41       • Withdrawal of Proposed Rules: Federal Plan Requirements for Greenhouse Gas Emissions  
42 From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model

1 Trading Rules; Amendments to Framework Regulations; and Clean Energy Incentive  
2 Program Design Details (USEPA 2017c)

3 Given this executive order, President Trump’s decision to withdraw from the Paris Accord, and the  
4 Trump Administration’s comments concerning climate change, the federal regulations on GHG  
5 emissions are currently uncertain.

6 Specific GHG regulations that USEPA has adopted to date include:

7 **40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.** This rule requires  
8 mandatory reporting of GHG emissions from suppliers of fossil fuels or industrial GHGs,  
9 manufacturers of vehicles and engines, and facilities that emit more than 25,000 metric tons (MT)  
10 of carbon dioxide equivalent (CO<sub>2</sub>e) emissions per year (USEPA, 2018). Additionally, reporting  
11 of emissions is required for owners of SF<sub>6</sub>- and PFC-insulated equipment when the total nameplate  
12 capacity of these insulating gases is above 17,280 pounds. The proposed project would not be  
13 expected to trigger GHG reporting according to the rule; however, GHG emissions of the project  
14 are quantified in this EIS/EIR.

15 **40 CFR Part 52. Prevention of Significant Deterioration and Title V Greenhouse Gas**  
16 **Tailoring Rule.** USEPA has mandated the application of Prevention of Significant Deterioration  
17 (PSD) requirements to facilities whose stationary source CO<sub>2</sub>e emissions exceed 75,000 tons per  
18 year (USEPA, 2011). The project would not be expected to trigger PSD permitting as required by  
19 this regulation; however, GHG emissions associated with the project are quantified in this EIS/EIR.  
20 It should be noted that on June 23, 2014, The U.S. Supreme Court issued a decision addressing the  
21 application of stationary source permitting requirements to GHG emissions in *Utility Air*  
22 *Regulatory Group v. USEPA*. The court found that USEPA may not treat GHGs as an air pollutant  
23 for purposes of determining whether a source is a major source required to obtain a PSD or Title V  
24 permit. The court also said that the USEPA could continue to require that PSD permits, otherwise  
25 required based on emissions of conventional pollutants, contain limitations on GHG emissions  
26 based on the application of Best Available Control Technology) (USEPA, 2014).

27 **Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks.** On May 19,  
28 2009, President Obama announced a national policy for fuel efficiency and emissions standards in  
29 the United States auto industry. The adopted federal standard applied to passenger cars and light-  
30 duty trucks for model years 2012 through 2016 and required an average fuel economy standard of  
31 35.5 miles per gallon (mpg) and 250 grams of CO<sub>2</sub> per mile by model year 2016. The rule surpasses  
32 the prior Corporate Average Fuel Economy (CAFE) standards. These standards were formally  
33 adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through  
34 2025 passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if  
35 GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of  
36 CO<sub>2</sub> per mile. In January 2017, the USEPA recommended no change to the GHG standards for  
37 light-duty vehicles for model years 2022–2025 during the mid-year review. However, in March  
38 2017, the USEPA announced they intend to reconsider the final determination issued in January  
39 2017. In April, 2018, the USEPA and National Highway Traffic Safety Administration (NHTSA)  
40 determined that the current standards are based on outdated information, and that more recent  
41 information suggests that the current standards may be too stringent and that the standards are not

1 appropriate in light of the record before USEPA and, therefore, should be revised as appropriate  
2 (USEPA 2018). The USEPA and NHTSA thus withdrew the previous Final Determination issued  
3 by the agency on January 12, 2017. The USEPA, in partnership with the NHTSA, will further  
4 explore the appropriate degree and form of changes to the program through a notice and comment  
5 rulemaking process.

6 **Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and**  
7 **Heavy-Duty Engines and Vehicles.** In 2011, the USEPA and NHTSA announced fuel economy  
8 and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–  
9 57513). The standards for CO<sub>2</sub> emissions and fuel consumption are tailored to three main vehicle  
10 categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.  
11 According to the USEPA, this regulatory program will reduce GHG emissions and fuel  
12 consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (USEPA  
13 and NHTSA 2011). In August 2016, the USEPA and NHTSA announced the adoption of the phase  
14 two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks.  
15 The phase two program will apply to vehicles with model year 2018 through 2027 for certain  
16 trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types  
17 of sizes of buses and work trucks. The final standards are expected to lower CO<sub>2</sub> emissions by  
18 approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime  
19 of the vehicles sold under the program (USEPA and NHTSA 2016).

20 **Fuel Efficiency Standards for Construction Equipment.** The federal government sets fuel  
21 efficiency standards for non-road diesel engines that are used in construction equipment. The  
22 regulations, contained in 40 CFR Parts 1039, 1065, and 1068, include multiple tiers of emission  
23 standards. Most recently, the USEPA adopted a comprehensive national program to reduce  
24 emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain  
25 the greatest reductions. To meet these Tier 4 emission standards, engine manufacturers will produce  
26 new engines with advanced control technologies (USEPA 2004).

## 27 **State**

28 California has promulgated a series of executive orders, laws, and regulations aimed at reducing  
29 both the level of GHGs in the atmosphere and emissions of GHGs from commercial and private  
30 activities within the State.

## 31 **California Air Resources Board**

32 CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the  
33 coordination and administration of both federal and state air pollution control programs within  
34 California. In this capacity, CARB conducts research, sets the California Ambient Air Quality  
35 Standards (CAAQS), compiles emission inventories, develops suggested control measures, and  
36 provides oversight of local programs. CARB establishes emissions standards for motor vehicles  
37 sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid),  
38 and various types of commercial equipment. It also sets fuel specifications to further reduce  
39 vehicular emissions. CARB has primary responsibility for the development of California's State  
40 Implementation Plan, for which it works closely with the federal government and the local air

1 districts. The State Implementation Plan is required for the state to take over implementation of the  
2 CAA.

3 In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel  
4 motor vehicle idling in order to reduce public exposure to diesel particulate matter (DPM) and other  
5 toxic air contaminants (TACs) (Title 13 California Code of Regulations [CCR], Section 2485.).  
6 The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater  
7 than 10,000 pounds that are licensed to operate on highways, regardless of where they are  
8 registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for  
9 more than 5 minutes at any given location with certain exemptions for equipment in which idling  
10 is a necessary function such as concrete trucks. While this measure primarily targets diesel  
11 particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary  
12 truck idling.

13 In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter (PM<sub>10</sub>  
14 and PM<sub>2.5</sub>) and nitrogen oxide (NO<sub>x</sub>) emissions from existing diesel vehicles operating in  
15 California (13 CCR, Section 2025, subsection (h)). The requirements were amended in December  
16 2010 and apply to nearly all diesel fueled trucks and buses with a gross vehicle weight rating greater  
17 than 14,000 pounds. For the largest trucks in the fleet (i.e., those with a gross vehicle weight rating  
18 greater than 26,000 pounds), there are two methods to comply with the requirements. The first  
19 method is for the fleet owner to retrofit or replace engines, starting with the oldest engine model  
20 year, to meet 2010 engine standards, or better. This is phased over 8 years, starting in 2015 and  
21 would be fully implemented by 2023, meaning that all trucks operating in the state subject to this  
22 option would meet or exceed the 2010 engine emission standards for NO<sub>x</sub> and PM by 2023. The  
23 second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet  
24 with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1,  
25 2016, their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters  
26 do not typically lower NO<sub>x</sub> emissions. Thus, fleet owners choosing the second method must still  
27 comply with the 2010 engine emission standards for their trucks and buses by 2020.

28 In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for  
29 off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers,  
30 loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The  
31 regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of  
32 diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines  
33 with newer emission-controlled models. Implementation is staggered based on fleet size (which is  
34 the total of all off-road horsepower under common ownership or control), with the largest fleets to  
35 begin compliance starting January 1, 2014. Each fleet must demonstrate compliance through one  
36 of two methods. The first method is to calculate and maintain fleet average emissions targets, which  
37 encourages the retirement or repowering of older equipment and rewards the introduction of newer  
38 cleaner units into the fleet. The second method is to meet the Best Available Control Technology  
39 (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies  
40 (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires  
41 that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all  
42 equipment in large and medium fleets and across 100 percent of small fleets by 2028. While these

1 regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of  
2 minimizing GHG emissions due to improved engine efficiencies.

### 3 **Senate Bills and Executive Orders**

4 **Assembly Bill 1493.** Assembly Bill (AB) 1493 (also known as the Pavley Bill) requires that CARB  
5 develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction  
6 of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by  
7 CARB to be vehicles whose primary use is noncommercial personal transportation in the State.”

8 To meet AB 1493 requirements, CARB approved amendments to the California Code of  
9 Regulations (CCR) in 2004 by adding GHG emissions standards to California’s existing standards  
10 for motor vehicle emissions. When fully phased in, the near-term standards would reduce GHG  
11 emissions by approximately 22 percent, compared to the 2002 fleet emissions, while the mid-term  
12 standards would reduce emissions by approximately 30 percent.

13 **Assembly Bill 32 (California Global Warming Solutions Act of 2006).** The State passed the  
14 California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code*  
15 *Division 25.5, Sections 38500 - 38599*). AB 32 establishes regulatory, reporting, and market  
16 mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on  
17 statewide GHG emissions. AB 32 requires reporting of GHG emissions by major sources under the  
18 Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR) (17 CCR 95100-  
19 95160). The MRR is applicable to electricity generators, industrial facilities, fuel suppliers, and  
20 electricity importers who generate 10,000 MT or 25,000 MT of CO<sub>2</sub>e per year, depending on the  
21 type of facility and type of emissions. AB 32 requires a reduction in statewide GHG emissions to  
22 1990 levels by 2020. A summary of the GHG emissions reductions required under HSC Division  
23 25.5 is provided in **Table 3.8-1, *Estimated Greenhouse Gas Emissions Reductions Required by***  
24 ***HSC Division 25.5.***

25

1  
2

**TABLE 3.8-1  
 ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS REQUIRED BY HSC DIVISION 25.5**

Emissions Category	GHG Emissions (MMT CO <sub>2</sub> e)
<b>2008 Scoping Plan (IPCC SAR)</b>	
2020 NAT Forecast (CARB 2008 Scoping Plan Estimate)	596
2020 Emissions Target Set by HSC Division 25.5 (i.e., 1990 Level)	427
Reduction below NAT Necessary to Achieve 1990 Levels by 2020	169 (28.4%) <sup>a</sup>
<b>2014 First Update to Scoping Plan (GHG Estimates Updated in 2014 to Reflect IPCC AR4 GWPs)</b>	
2020 NAT Forecast (CARB 2011 Scoping Plan Estimate)	509.4
2020 Emissions Target Set by HSC Division 25.5 (i.e., 1990 Level)	431
Reduction below NAT Necessary to Achieve 1990 Levels by 2020	78.4 (15.4%) <sup>b</sup>
<b>2017 Scoping Plan</b>	
2030 NAT Forecast ("Reference Scenario" which includes 2020 GHG reduction policies and programs)	389
2030 Emissions Target Set by HSC Division 25.5 (i.e., 40% below 1990 Level)	260
Reduction below NAT Necessary to Achieve 40% below 1990 Level by 2030	129 (33.2%) <sup>c</sup>

<sup>a</sup> 596 – 427 = 169 / 596 = 28.4%  
<sup>b</sup> 509.4 – 431 = 78.4 / 509.4 = 15.4%  
<sup>c</sup> 389 – 260 = 129 / 389 = 33.2%

SOURCES: California Air Resources Board, Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, August 19, 2011; California Air Resources Board, 2020 No-Action-Taken (NAT) Emissions Projection, 2014 Edition. Available: <http://www.arb.ca.gov/cc/inventory/data/bau.htm>. Accessed December 2017; California Air Resources Board, California's 2017 Climate Change Scoping Plan, (November 2017). Available: [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf). Accessed January 2018.

3

4 **Senate Bill 1368.** Senate Bill (SB) 1368 (Chapter 598, Statutes of 2006) is the companion bill of  
 5 AB 32 and was signed into law in September 2006. SB 1368 required the California Public Utilities  
 6 Commission (CPUC) to establish a performance standard for baseload generation of GHG  
 7 emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the California  
 8 Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June  
 9 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-  
 10 cycle, natural gas fired plant.

11 **Senate Bill 97.** SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; Public Resources  
 12 Code Sections 21083.05 and 21097), acknowledges that climate change is a prominent  
 13 environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of  
 14 Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare,  
 15 develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the  
 16 effects of GHG emissions), as required by CEQA.

1 OPR published a technical advisory recommending that CEQA lead agencies make a good-faith  
2 effort to estimate project-related GHG emissions. Specifically, based on available information,  
3 CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic,  
4 energy consumption, water usage, and construction activities to determine whether project-level or  
5 cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested  
6 CARB technical staff to recommend a method for setting CEQA thresholds of significance, as  
7 described in CEQA Guidelines Section 15064.7 that would encourage consistency and uniformity  
8 in CEQA GHG emissions analyses throughout the State.

9 The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as  
10 directed by SB 97. On February 16, 2010, the Office of Administrative Law approved the CEQA  
11 Guidelines Amendments and filed them with the Secretary of State for inclusion in the CCR. The  
12 CEQA Guidelines Amendments became effective on March 18, 2010.

13 **Senate Bill 375.** SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional  
14 transportation planning efforts, regional GHG reduction targets, and land use and housing  
15 allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable  
16 communities strategy (SCS) or alternative planning strategy (APS) that would prescribe land use  
17 allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will  
18 provide each affected region with reduction targets for passenger car and light truck regional  
19 emissions for 2020 and 2035. Reduction targets are updated every 8 years; but can be updated every  
20 4 years if advancements in emissions technologies affect the reduction strategies to achieve the  
21 targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its  
22 assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may be  
23 ineligible for funding programmed after January 1, 2012. Kern Council of Governments (KCOG)  
24 is the MPO for the region in which the project is located. In addition, on August 16, 2018, KCOG  
25 adopted their 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS),  
26 which is an update to the previous 2014 RTP. The RTP/SCS seeks to: improve economic vitality,  
27 improve air quality, improve the health of communities, improve transportation and public safety,  
28 promote the conservation of natural resources and undeveloped land, increase regional access to  
29 community services, increase regional and local energy independence and increase opportunities  
30 to help shape our community's future, while successfully achieving the GHG-emission-reduction  
31 targets set by CARB.

32 **Senate Bill 32.** Signed into law on September 8, 2016, SB 32 (Amendments to California Global  
33 Warming Solutions Act of 2006: Emission Limit) codifies the 2030 target in the recent EO B-30-  
34 15 (40 percent below 1990 levels by 2030). The 2030 target is intended to ensure that California  
35 remains on track to achieve the goal set forth by EO B-30-15 to reduce Statewide GHG emissions  
36 by 2050 to 80 percent below 1990 levels. SB 32 states the intent of the Legislature to continue to  
37 reduce GHG for the protection of all areas of the state and especially the state's most disadvantaged  
38 communities which are disproportionately impacted by the deleterious effects of climate change on  
39 public health (California Legislative Information 2016). SB 32 was passed with companion  
40 legislation AB 197, which provides additional direction for developing the Scoping Plan.

1 **Senate Bills 1078 and 107.** SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of  
2 electricity, including investor-owned utilities and community choice aggregators, to provide at least  
3 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006)  
4 changed the target date to 2010.

5 **Senate Bill 350.** Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350  
6 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350  
7 will: (1) increase the standards of the California Renewable Portfolio Standard (RPS) program by  
8 requiring that the amount of electricity generated and sold to retail customers per year from eligible  
9 renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State  
10 Energy Resources Conservation and Development Commission to establish annual targets for  
11 statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling  
12 of statewide energy efficiency savings in electricity and natural gas final end uses of retail  
13 customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator  
14 into a regional organization; and (4) require the state to reimburse local agencies and school  
15 districts for certain costs mandated by the state through procedures established by statutory  
16 provisions. Among other objectives, the Legislature intends to double the energy efficiency savings  
17 in electricity and natural gas final end uses of retail customers through energy efficiency and  
18 conservation (California Legislative Information 2017).

19 **Executive Order S-14-08.** EO S-14-08 expands the State's Renewable Energy Standard to  
20 33 percent renewable power by 2020. Additionally, EO S-21-09 (signed on September 15,  
21 2009) directs CARB to adopt regulations requiring that 33 percent of electricity sold in the state  
22 come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on  
23 September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned  
24 electricity retailers.

25 **Executive Order S-21-09.** EO S-21-09 directs CARB to adopt regulations to increase California's  
26 RPS to 33 percent by 2020. The target was signed into law as SB 2 by Governor Brown in April  
27 2011. This builds upon SB 1078 (2002), which established the California RPS program, requiring  
28 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline  
29 to 2010.

30 **Executive Order S-3-05.** EO S-3-05 set forth the following targets for progressively reducing  
31 statewide GHG emissions:

- 32 • By 2010, reduce GHG emissions to 2000 levels.
- 33 • By 2020, reduce GHG emissions to 1990 levels.
- 34 • By 2050, reduce GHG emissions to 80 percent below 1990 levels.

35 The executive order directed the Secretary of CalEPA to coordinate a multi-agency effort to reduce  
36 GHG emissions to the target levels. The Secretary is also mandating that biannual reports be  
37 submitted to the California Governor and Legislature describing the progress made toward the  
38 emissions targets, the impacts of global climate change on California's resources, and mitigation  
39 and adaptation plans to combat these impacts. To comply with the executive order, the secretary of

1 CalEPA created the California Climate Action Team (CAT), made up of members from various  
2 state agencies and commissions.

3 **Executive Order S-20-06.** On October 17, 2006, Governor Arnold Schwarzenegger signed EO S-  
4 20-06, which calls for continued efforts and coordination among state agencies to implement GHG  
5 emission reduction policies, AB 32, and the Health and Safety Code (Division 25.5) through a  
6 market-based compliance program. In addition, EO S-20-06 requires the development of GHG  
7 reporting and reduction protocols and a multistate registry through joint efforts among CARB,  
8 CalEPA, and the California Climate Action Registry (CCAR). EO S-20-06 directs the Secretary  
9 for Environmental Protection to coordinate with the CAT to plan incentives for market-based  
10 mechanisms that have the potential of reducing GHG emissions.

11 **Executive Order S-1-07.** EO S-1-07 proclaims that the transportation sector is California’s main  
12 source of GHG emissions, generating more than 40 percent of statewide emissions. It establishes a  
13 goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent  
14 by 2020. This order also directs the CARB to determine whether this Low Carbon Fuel Standard  
15 (LCFS) can be adopted as a discrete early-action measure, as part of the effort to meet AB 32  
16 mandates.

17 **Executive Order S-13-08.** EO S-13-08 seeks to enhance the State’s management of climate  
18 impacts including sea level rise, increased temperatures, shifting precipitation, and extreme  
19 weather events by facilitating the development of the State’s first climate adaptation strategy. This  
20 would provide consistent guidance from experts on how to address climate change impacts in the  
21 state.

22 **Executive Order B-16-2012.** In March 23, 2012, Governor Brown issued EO B-16-2012 to  
23 encourage zero emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC,  
24 California Public Utilities Commission, and other relevant agencies to work with the Plug-in  
25 Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks  
26 concerning ZEVs. By 2020, the state’s ZEV infrastructure should support up to one million  
27 vehicles. By 2025, EO B-16-2012 aims to put over 1.5 million ZEVs on California roads and  
28 displace at least 1.5 billion gallons of petroleum. The EO also directs state government to begin  
29 purchasing ZEVs. In 2015, 10 percent of state departments’ light-duty fleet purchases must be  
30 ZEVs, climbing to 25 percent of light duty purchases by 2020. EO B-16-2012 sets a target for 2050  
31 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels (Office of  
32 Governor Edmund G. Brown Jr. 2012).

33 **Executive Order B-30-15.** EO B-30-15 added the interim target to reduce statewide GHG  
34 emissions 40 percent below 1990 levels by 2030 and requires CARB to update its current AB 32  
35 Scoping Plan to identify measures to meet the 2030 target.

### 36 **CARB Scoping Plan**

37 On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve  
38 the California GHG reductions required by AB 32 through subsequently enacted regulations.  
39 CARB’s Scoping Plan contains the main strategies California would implement to reduce the

1 projected 2020 Business as Usual (BAU) emissions to 1990 levels, as required by AB 32. These  
2 strategies are intended to reduce CO<sub>2</sub>e<sup>1</sup> emissions by 174 million metric tons (MT), or  
3 approximately 30 percent, from the State’s projected 2020 emissions level of 596 million MT CO<sub>2</sub>e  
4 under a BAU<sup>2</sup> scenario. This reduction of 42 million MT CO<sub>2</sub>e, or almost ten percent from 2002 to  
5 2004 average emissions, would be required despite the population and economic growth forecasted  
6 through 2020.

7 CARB’s Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence  
8 of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting  
9 emissions from a past baseline year using growth factors specific to each of the different economic  
10 sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB  
11 used 3-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. When  
12 CARB’s Scoping Plan process was initiated, 2004 was the most recent year for which actual data  
13 was available. The measures described in CARB’s Scoping Plan are intended to reduce the  
14 projected 2020 BAU to 1990 levels, as required by AB 32.

15 **First Update to the Climate Change Scoping Plan (May 2014)**

16 This First Update to California’s Climate Change Scoping Plan (2014 Scoping Plan Update) was  
17 developed by the CARB in collaboration with the CAT and reflects the input and expertise of a  
18 range of state and local government agencies. The Update reflects public input and  
19 recommendations from business, environmental, environmental justice, utilities and community-  
20 based organizations provided in response to the release of prior drafts of the Update, a Discussion  
21 Draft in October 2013, and a draft Proposed Update in February 2014.

22 This report highlights California’s success to date in reducing its GHG emissions and lays the  
23 foundation for establishing a broad framework for continued emission reductions beyond 2020, on  
24 the path to 80 percent below 1990 levels by 2050. The First Update includes recommendations for  
25 establishing a mid-term emissions limit that aligns with the State’s long-term goal of an emissions  
26 limit 80 percent below 1990 levels by 2050 and sector-specific discussions covering issues,  
27 technologies, needs, and ongoing State activities to significantly reduce emissions throughout  
28 California’s economy through 2050. The focus areas include energy, transportation, agriculture,  
29 water, waste management, and natural and working lands (CARB 2014). With respect to the  
30 transportation sector, California has outlined several steps in the State’s zero emission vehicle  
31 (ZEV) Action Plan to further support the market and accelerate its growth. Committed  
32 implementation of the actions described in the plan will help meet Governor Brown’s 2012 EO B-  
33 16-2012, which—in addition to establishing a more specific 2050 GHG target for the transportation  
34 sector of 80 percent from 1990 levels—called for 1.5 million ZEVs on California’s roadways by  
35 2025.

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1 Carbon Dioxide Equivalent (CO<sub>2</sub>e) - A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

2 “Business as Usual” refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, <http://www.arb.ca.gov/cc/inventory/data/bau.htm>, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the “definition.”

1 Achieving such an aggressive 2050 target will require innovation and unprecedented advancements  
2 in energy demand and supply.<sup>3</sup> Emissions from 2020 to 2050 will have to decline at more than  
3 twice the rate of that which is needed to reach the 2020 statewide emissions limit. In addition to  
4 our climate objectives, California also must meet federal clean air standards. Emissions of criteria  
5 air pollutants, including ozone precursors (primarily oxides of nitrogen, or NOx) and particulate  
6 matter, must be reduced by an estimated 90 percent by 2032 to comply with federal air quality  
7 standards. The scope and scale of emission reductions necessary to improve air quality is similar  
8 to that needed to meet long-term climate targets. Achieving both objectives will align programs  
9 and investments to leverage limited resources for maximum benefit.

## 10 **Second Update to the Climate Change Scoping Plan (November 2017)**

11 On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change*  
12 *Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for  
13 achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels  
14 (CARB 2017). The 2017 Scoping Plan Update identifies key sectors of the implementation strategy,  
15 which includes improvements in low carbon energy, industry, transportation sustainability, natural  
16 and working lands, waste management, and water. Through a combination of data synthesis and  
17 modeling, CARB determined that the target Statewide 2030 emissions limit is 260 million metric  
18 tons (MMT) of CO<sub>2</sub>e, and that further commitments will need to be made to achieve an additional  
19 reduction of 50 MMT CO<sub>2</sub>e beyond current policies and programs. The cornerstone of the 2017  
20 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030  
21 GHG emissions goal and ensure achievement of the 2050 limit set forth by EO B-30-15.

22 With respect to project-level GHG reduction actions and thresholds for individual development  
23 projects, the 2017 Scoping Plan Update indicates:

24 *Beyond plan-level goals and actions, local governments can also support climate*  
25 *action when considering discretionary approvals and entitlements of individual*  
26 *projects through CEQA. Absent conformity with an adequate geographically-*  
27 *specific GHG reduction plan as described in the preceding section above, CARB*  
28 *recommends that projects incorporate design features and GHG reduction*  
29 *measures, to the degree feasible, to minimize GHG emissions. Achieving no net*  
30 *additional increase in GHG emissions, resulting in no contribution to GHG*  
31 *impacts, is an appropriate overall objective for new development.*<sup>4</sup>

## 32 **Renewable Energy: California Renewables Portfolio Standard Program**

33 Established in 2002 under SB 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB  
34 X1-2, and again in 2015 under SB 350, California's RPS is one of the most ambitious renewable  
35 energy standards in the country. The RPS program requires investor-owned utilities, electric service  
36 providers, and community choice aggregators to increase procurement from eligible renewable

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<sup>3</sup> Ibid.

<sup>4</sup> *Id.* at 101.

1 energy resources to 50 percent of total procurement by December 31, 2030.<sup>5</sup> The legislation also  
2 included interim targets of 40 percent by 2024 and 45 percent by 2027.

### 3 **California Green Buildings Standard Code**

4 The California Energy Commission first adopted Energy Efficiency Standards for Residential and  
5 Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to  
6 reduce energy consumption in the state. Although not originally intended to reduce GHG emissions,  
7 increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels  
8 would result in fewer GHG emissions from residential and nonresidential buildings subject to the  
9 standard. The standards are updated periodically (typically every 3 years) to allow for the  
10 consideration and inclusion of new energy efficiency technologies and methods. The 2016 update  
11 to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several  
12 key areas to improve the energy efficiency of renovations and addition to existing buildings as well  
13 as newly constructed buildings and renovations and additions to existing buildings. The major  
14 efficiency improvements to the residential Standards involve improvements for attics, walls, water  
15 heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards  
16 include alignment with the American Society of Heating, Refrigerating and Air-Conditioning  
17 Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update requires that  
18 enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building  
19 permits for any construction (CEC, 2015).

20 Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green  
21 Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to “improve public  
22 health, safety and general welfare by enhancing the design and construction of buildings through  
23 the use of building concepts having a positive environmental impact and encouraging sustainable  
24 construction practices in the following categories: (1) Planning and design; (2) Energy efficiency;  
25 (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5)  
26 Environmental air quality.” (CBSC, 2010) As of January 1, 2011, the CALGreen Code is  
27 mandatory for all new buildings constructed in the state. The CALGreen Code establishes  
28 mandatory measures for new residential and non-residential buildings. Such mandatory measures  
29 include energy efficiency, water conservation, material conservation, planning and design, and  
30 overall environmental quality. The CALGreen Code was most recently updated in 2016 to include  
31 new mandatory measures for residential and nonresidential uses; the new measures took effect on  
32 January 1, 2017 (CBSC, 2016).

33 The state has adopted regulations to increase the proportion of electricity from renewable sources.  
34 In November 2008, Governor Schwarzenegger signed EO S-14-08 (CCS, 2008), which expands  
35 the state's Renewables Portfolio Standard to 33 percent renewable power by 2020. On April 12,  
36 2011, Governor Jerry Brown signed SB X1-2 to increase California’s Renewables Portfolio  
37 Standard to 33 percent by 2020. SB 350 (Chapter 547, Statutes of 2015) further increased the

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<sup>5</sup> As of 2015, California’s top three POU’s were on track or ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 29.5%, 24.5% and 35.2%, respectively ([www.cpuc.ca.gov/rps\\_homepage/](http://www.cpuc.ca.gov/rps_homepage/), accessed November 8, 2017).

1 Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets  
2 of 40 percent by 2024 and 45 percent by 2027.

### 3 **Cap-and-Trade Program**

4 The Climate Change Scoping Plan identifies a Cap-and-Trade Program as a key strategy CARB  
5 will employ to help California meet its GHG reduction targets for 2020 and 2030, and ultimately  
6 achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under HSC  
7 Division 25.5, CARB designed and adopted a California Cap-and-Trade Program to reduce GHG  
8 emissions from major sources (deemed “covered entities”) by setting a firm cap on statewide GHG  
9 emissions and employing market mechanisms to achieve the state’s emission-reduction mandate of  
10 returning to 1990 levels of emissions by 2020 and 40 percent below 1990 levels by 2030 (17 CCR  
11 Sections 95800–96023). Under Cap-and-Trade program, an overall limit is established for GHG  
12 emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production,  
13 and large industrial facilities that emit more than 25,000 MT CO<sub>2</sub>e per year) and declines over time,  
14 and facilities subject to the cap can trade permits to emit GHGs. The statewide cap for GHG  
15 emissions from the capped sectors commenced in 2013 and declines over time, achieving GHG  
16 emission reductions throughout the Program’s duration (17 CCR Sections 95811, 95812). On July  
17 17, 2017, the California legislature passed AB 398, extending the Cap-and-Trade program through  
18 2030.

19 The Cap-and-Trade Regulation provides a firm cap, ensuring that the 2020 statewide emission limit  
20 will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not  
21 guarantee GHG emissions reductions in any discrete location or by any particular source. Rather,  
22 GHG emissions reductions are only guaranteed on an accumulative basis.

23 If California’s direct regulatory measures reduce GHG emissions more than expected, then the Cap-  
24 and-Trade Program will be responsible for relatively fewer emissions reductions. If California’s  
25 direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade  
26 Program will be responsible for relatively more emissions reductions. In other words, the Cap-and-  
27 Trade Program functions similarly to an insurance policy for meeting California’s GHG emissions  
28 reduction mandates.

### 29 ***Regional and Local***

#### 30 **Kern Council of Governments**

31 The Kern Council of Governments recently adopted the 2018 RTP/SCS on August 16, 2018.  
32 KCOG is the Regional Transportation Planning Agency (RTPA) for the Kern County region. The  
33 2018 RTP/SCS is a planning document prepared in cooperation with the Federal Highway  
34 Administration (FHWA), Federal Transit Administration (FTA), the California Department of  
35 Transportation (Caltrans), and other stakeholders, including transportation system users. SB 375  
36 includes the following four primary findings related to the RTP/SCS development process:

- 37 • That CARB develop regional GHG emission reduction targets for cars and light trucks for  
38 each of the 18 MPOs in California, including KCOG. The target for Kern County is a per  
39 capita reduction in GHG emissions from passenger vehicle travel of 5 percent by 2020 and  
40 10 percent by 2035 relative to 2005 levels.

- 1       • Kern COG was required to prepare an SCS that specifies how the GHG emission reduction  
2       target set by CARB will be achieved. If the target cannot be met through the SCS, then an  
3       APS shall be prepared by KCOG. Chapter 4 of the 2018 RTP/SCS includes the SCS for  
4       KCOG. The RTP/SCS for Kern demonstrated reductions of 14.1 percent for 2020 and 16.6  
5       percent for 2035, exceeding targets established by CARB.
- 6       • Streamlines CEQA requirements for specific residential and mixed-use developments that  
7       are consistent with the Kern COG SCS or APS (as determined by CARB) to achieve  
8       regional GHG emissions reduction target.

#### 9       **Eastern Kern Air Pollution Control District**

10      The Eastern Kern Air Pollution Control District (EKAPCD) in 2012 adopted an addendum to its  
11      CEQA Guidelines to address GHG impacts, including quantitative thresholds for determining  
12      significance of GHG emissions for projects where EKAPCD is the CEQA lead agency. A project  
13      is considered to have a significant project or cumulatively considerable impact if it exceeds the  
14      following criteria:

- 15       • Generate 25,000 MT or more of CO<sub>2</sub>e per year

16      The above impact would be considered to be fully reduced to below the significance level if it  
17      meets one of the following conditions:

- 18       • The project demonstrates to EKAPCD that it is in compliance with a state GHG reduction  
19       plan such as AB 32 or future federal GHG reduction plan if it is more stringent than the  
20       state plan.
- 21       • Project GHG emissions can be reduced by at least 20 percent below BAU through  
22       implementation of one or more of the following strategies:
  - 23          a. Compliance with a Best Performance Standard (BPS)
  - 24          b. Compliance with GHG Offset
  - 25          c. Compliance with an Alternative GHG Reduction Strategy

#### 26      **Kern County General Plan**

27      The Kern County General Plan (Kern County, 2009), originally adopted on June 15, 2004, and last  
28      amended on September 22, 2009, contains the following policies that would indirectly impact GHG  
29      emissions (i.e., through the reduction of fossil fuel use). The policies and implementation measures  
30      in the Kern County General Plan for greenhouse gas emissions that are applicable to the project are  
31      provided below. The Kern County General Plan contains additional policies, goals, and  
32      implementation measures that are more general in nature and are not specific to development such  
33      as the proposed project. Therefore, they are not listed below, but all policies, goals, and  
34      implementation measures in the Kern County General Plan are incorporated by reference.

1 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation**  
2 **Element**

3 Policies

4 Policy 18: The air quality implications of new discretionary land use proposals shall be  
5 considered in approval of major developments. Special emphasis will be placed on  
6 minimizing air quality degradation in the desert to enable effective military  
7 operations and in the valley region to meet attainment goals.

8 Policy 19: In considering discretionary projects for which an Environmental Impact Report  
9 must be prepared pursuant to the California Environmental Quality Act, the  
10 appropriate decision making body, as part of its deliberations, will ensure that:

- 11 (a) All feasible mitigation to reduce significant adverse air quality impacts have  
12 been adopted; and
- 13 (b) The benefits of the proposed project outweigh any unavoidable significant  
14 adverse effects on air quality found to exist after inclusion of all feasible  
15 mitigation. This finding shall be made in a statement of overriding  
16 considerations and shall be supported by factual evidence to the extent that  
17 such a statement is required pursuant to the California Environmental Quality  
18 Act.

19 Implementation Measures

20 Measure F: All discretionary permits shall be referred to the appropriate air district for review  
21 and comment.

22 Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall  
23 incorporate diesel exhaust reduction strategies including, but not limited to:

- 24 a. Minimizing idling time.  
25 b. Electrical overnight plug-ins.

26 Measure H: Discretionary projects may use one or more of the following to reduce air quality  
27 effects:

- 28 a. Pave dirt roads within the development.  
29 b. Pave outside storage areas.  
30 c. Provide additional low Volatile Organic Compounds (VOC) producing trees  
31 on landscape plans.  
32 d. Use of alternative fuel fleet vehicles or hybrid vehicles.  
33 e. Use of emission control devices on diesel equipment.  
34 f. Develop residential neighborhoods without fireplaces or with the use of  
35 Environmental Protection Agency certified, low emission natural gas  
36 fireplaces.  
37 g. Provide bicycle lockers and shower facilities on site.  
38 h. Increasing the amount of landscaping beyond what is required in the Zoning  
39 Ordinance (Chapter 19.86).  
40 i. The use and development of park and ride facilities in outlying areas.

- 1                   j. Other strategies that may be recommended by the local Air Pollution Control  
2                   Districts.

### 3   **Kern County General Plan Chapter 5: Energy Element – Solar Energy Development**

#### 4   Goal

5   Goal 1:           Encourage safe and orderly commercial solar development.

#### 6   Policies

7   Policy 1:         The County shall encourage domestic and commercial solar energy uses to  
8                   conserve fossil fuels and improve air quality.

9   Policy 3:         The County should permit solar energy development in the desert and valley  
10                   planning regions that does not pose significant environmental or public health and  
11                   safety hazards.

### 12   **3.8.1.3   Environmental Setting**

13   This section of the EIS/EIR describes the existing physical environmental conditions in the vicinity  
14   of the project as they relate to the potential greenhouse gas impacts of the proposed project and  
15   alternatives.

16   Global climate change refers to changes in average climatic conditions on Earth as a whole,  
17   including changes in temperature, wind patterns, precipitation and storms. Historical records  
18   indicate that global climate changes have occurred in the past due to natural phenomena; however,  
19   current data increasingly indicate that the current global conditions differ from past climate changes  
20   in rate and magnitude. Global climate change attributable to anthropogenic (human) GHG  
21   emissions is currently one of the most important and widely debated scientific, economic and  
22   political issues in the United States and the world. The extent to which increased concentrations of  
23   GHGs have caused or will cause climate change and the appropriate actions to limit and/or respond  
24   to climate change are the subject of significant and rapidly evolving regulatory efforts at the federal  
25   and state levels of government.

26   CARB and USEPA regulate GHG emissions within the State of California and the United States,  
27   respectively. While CARB has the primary regulatory responsibility within California for GHG  
28   emissions, local agencies can also adopt policies for GHG emission reduction. CARB has divided  
29   California into regional air basins. The Proposed Action is located in Kern County, which is within  
30   the Mojave Desert Air Basin (MDAB), and under the jurisdiction of EKAPCD.

#### 31   **Greenhouse Gases**

32   GHGs are compounds in the Earth's atmosphere which play a critical role in determining  
33   temperature near the Earth's surface. More specifically, these gases allow high-frequency  
34   shortwave solar radiation to enter the Earth's atmosphere, but retain some of the low frequency  
35   infrared energy which is radiated back from the Earth towards space, resulting in a warming of the  
36   atmosphere. Not all GHGs possess the same ability to induce climate change; as a result, GHG  
37   contributions are commonly quantified in the units of CO<sub>2</sub>e. Mass emissions are calculated by  
38   converting pollutant specific emissions to CO<sub>2</sub>e emissions by applying the proper global warming

1 potential (GWP) value.<sup>6</sup> GWP is the measure of the amount of energy one ton of a gas will absorb  
2 over a given period of time, relative to the emissions of one ton of carbon dioxide. The larger the  
3 GWP, the more that a given gas warms the Earth compared to CO<sub>2</sub> over that time period (USEPA,  
4 2017a). These GWP ratios are provided by the Intergovernmental Panel on Climate Change (IPCC)  
5 in AR4 (IPCC, 2007) and can be found in 40 CFR 98 Table 1A<sup>7</sup>. By applying the GWP ratios,  
6 project-related CO<sub>2</sub>e emissions can be tabulated in metric tons per year. Typically, the GWP ratio  
7 corresponding to the warming potential of CO<sub>2</sub> over a 100-year period is used as a reference point  
8 for GHG emissions. The CO<sub>2</sub>e values are calculated for construction years as well as project build-  
9 out conditions in order to generate GHG emissions for construction and operation. Compounds that  
10 are regulated as GHGs are discussed below (USEPA, 2017b).

- 11 • **Carbon Dioxide:** CO<sub>2</sub> is the most abundant anthropogenic GHG in the atmosphere and is  
12 primarily generated from fossil fuel combustion from stationary and mobile sources. CO<sub>2</sub>  
13 is also generated from solid waste, trees and wood products, and chemical reactions (e.g.,  
14 the manufacture of cement). CO<sub>2</sub> is also removed from the atmosphere (or sequestered)  
15 when it is absorbed by plants as part of the biological carbon cycle. CO<sub>2</sub> is the reference  
16 gas (GWP of 1) for determining the GWPs of other GHGs.
- 17 • **Methane:** CH<sub>4</sub> is emitted from biogenic sources (i.e., resulting from the activity of living  
18 organisms), incomplete combustion in forest fires, anaerobic decomposition of organic  
19 matter in landfills, manure management, and leaks in natural gas pipelines. The GWP of  
20 CH<sub>4</sub> is 25.
- 21 • **Nitrous Oxide:** N<sub>2</sub>O produced by human-related sources including agricultural soil  
22 management, animal manure management, sewage treatment, mobile and stationary  
23 combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of  
24 N<sub>2</sub>O is 298.
- 25 • **Hydrofluorocarbons:** HFCs are fluorinated compounds consisting of hydrogen, carbon,  
26 and fluorine. They are typically used as refrigerants in both stationary refrigeration and  
27 mobile air conditioning systems. The GWPs of HFCs ranges from 124 for HFC-152a to  
28 14,800 for HFC-23.
- 29 • **Perfluorocarbons:** PFCs are fluorinated compounds consisting of carbon and fluorine.  
30 They are primarily created as a byproduct of aluminum production and semiconductor  
31 manufacturing. The GWPs of PFCs range from 7,390 to 17,700.
- 32 • **Sulfur Hexafluoride:** SF<sub>6</sub> is a fluorinated compound consisting of sulfur and fluoride. It  
33 is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an  
34 electrical insulator in high voltage equipment that transmits and distributes electricity. SF<sub>6</sub>  
35 has a GWP of 22,800.

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<sup>6</sup> GWPs and associated CO<sub>2</sub>e values were developed by the Intergovernmental Panel on Climate Change (IPCC), and published in its Second Assessment Report (SAR) in, 1996. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's SAR. The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The California Air Resources Board (CARB) has begun reporting GHG emission inventories for California using the GWP values from the IPCC AR4.

<sup>7</sup> 40 CFR 98 Table 1A. Available at: <https://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol22/pdf/CFR-2012-title40-vol22-part98-subpartA-appA.pdf>. Accessed August 2018.

1 In most cases, GHGs have both natural and anthropogenic (human-caused) sources. Natural  
2 mechanisms already exist as part of the “carbon cycle” for removing GHGs from the atmosphere  
3 (often called land or ocean sinks). Human activities associated with the Industrial Revolution  
4 beginning in the late 18th century have also changed the composition of the atmosphere. The  
5 burning of fossil fuels, such as coal and oil, and deforestation has caused the concentrations of heat-  
6 trapping GHGs to increase significantly in our atmosphere. Because of the increase in  
7 anthropogenic sources, levels of GHGs have exceeded the normal rates of natural absorption. This  
8 has resulted in increased atmospheric concentrations of GHGs and potentially human-induced  
9 climate change.

10 GHG emissions in the United States come mostly from energy use. Energy-related CO<sub>2</sub> emissions  
11 resulting from fossil fuel exploration and use account for approximately three-quarters of the  
12 human-generated GHG emissions in the United States, primarily in the form of CO<sub>2</sub> emissions from  
13 burning fossil fuels. More than half the energy-related emissions come from large stationary  
14 sources, such as power plants. As previously stated, the generation of electricity can produce GHGs  
15 with criteria air pollutants that have been traditionally regulated under the federal and state Clean  
16 Air Acts. For fossil fuel-fired power plants, the GHG emissions include primarily CO<sub>2</sub>, with much  
17 smaller amounts of N<sub>2</sub>O, and CH<sub>4</sub> (often from unburned natural gas). For solar power energy  
18 generation projects, stationary-source GHG emissions are much smaller than fossil fuel-fired  
19 power plants, but the associated maintenance vehicle emissions are higher due to the different and  
20 far-afield maintenance requirements that necessitate more vehicles and more travel within the  
21 project site. Other sources of GHG emissions include SF<sub>6</sub> from high-voltage equipment and HFCs  
22 and PFCs from refrigeration/chiller equipment. GHG emissions from the electricity sector are  
23 dominated by CO<sub>2</sub> emissions from carbon-based fuels; other sources of GHG emissions are small  
24 and are more likely to be easily controlled or reused/recycled.

### 25 ***Greenhouse Gas Emissions Inventories***

26 Worldwide man-made emissions of GHGs were approximately 49,000 MMT CO<sub>2</sub>e annually  
27 including ongoing emissions from industrial and agricultural sources and emissions from land use  
28 changes (e.g., deforestation) (IPCC, 2014). Emissions of CO<sub>2</sub> from fossil fuel use and industrial  
29 processes account for 65 percent of the total while CO<sub>2</sub> emissions from all sources accounts for 76  
30 percent of the total. Methane emissions account for 16 percent and N<sub>2</sub>O emissions for 6.2 percent.  
31 Global CO<sub>2</sub> emissions are expected to increase by 1.9 percent annually between 2001 and 2025.  
32 Much of the increase in these emissions is expected to occur in the developing world where  
33 emerging economies are fueled with fossil energy, such as China and India. Around 2018,  
34 developing countries’ emissions are expected to surpass the emissions of industrialized countries,  
35 increasing by 2.7 percent annually between 2001 and 2025 (faster than the world average).

36

1 The United States is the second largest emitter of GHGs of any nation on earth (USEPA, 2017).  
2 California CO<sub>2</sub> emissions are much less than the national average, both in per capita emissions (49<sup>th</sup>  
3 out of 51) and per gross state product (47<sup>th</sup> out of 51) in the US (U.S. Energy Information  
4 Administration, 2017). Based on data from the USEPA (USEPA, 2017), the total GHG emissions  
5 in the United States were 6,586.7 MMT CO<sub>2</sub>e in 2015, a 3.5 percent increase from 1990 levels.  
6 Emissions decreased from 2014 to 2015 by 2.3 percent. The decrease in total greenhouse gas  
7 emissions between 2014 and 2015 was driven in large part by a decrease in CO<sub>2</sub> emissions from  
8 fossil fuel combustion. The decrease in CO<sub>2</sub> emissions from fossil fuel combustion was a result of  
9 multiple factors, including: (1) substitution from coal to natural gas consumption in the electric  
10 power sector; (2) warmer winter conditions in 2015 resulting in a decreased demand for heating  
11 fuel in the residential and commercial sectors; and (3) a slight decrease in electricity demand.  
12 Relative to 1990, the baseline for this Inventory, gross emissions in 2015 are higher by 3.5 percent,  
13 down from a high of 15.5 percent above 1990 levels in 2007. In 2015, the electrical, transportation,  
14 industrial end-use sectors accounted for 77 percent of the total US emissions. With electrical,  
15 transportation, and industrial sources emitting 29 percent, 27 percent and 21 percent of CO<sub>2</sub>  
16 emissions, respectively. The commercial and residential end-use sectors accounted for 7 and 6  
17 percent, respectively, agriculture accounted for 9 percent, and the U.S. Territories accounted for 1  
18 percent of CO<sub>2</sub> emissions (USEPA, 2017b).

19 CARB compiles GHG inventories for the state of California. Based on the 2016 GHG inventory  
20 data (i.e., the latest year for which data are available) prepared by CARB in 2018, California emitted  
21 429.4 MMT CO<sub>2</sub>e including emissions resulting from imported electrical power (CARB, 2018).  
22 Combustion of fossil fuel in the transportation sector was the single largest source of California's  
23 GHG emissions in 2016, accounting for 40 percent of the total GHG emissions in the state. This  
24 sector was followed by the industrial sector at 23 percent and the electric power sector (including  
25 both in-state and out of state sources) at 16 percent (CARB, 2018b). CARB has projected that,  
26 unregulated statewide GHG emissions for the year 2020 will be 431 MMT CO<sub>2</sub>e (CARB, 2014).  
27 These projections represent the emissions that would be expected to occur in the absence of any  
28 GHG reduction actions. **Table 3.8-2, *State of California Greenhouse Gas Emissions***, identifies and  
29 quantifies statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to  
30 forest growth) in 1990 and 2016. As shown in the table, the transportation sector is the largest  
31 contributor to statewide GHG emissions at approximately 40 percent in 2016.

1  
2

**TABLE 3.8-2  
 STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS**

Category	Total 1990 Emissions using IPCC SAR (MMT CO <sub>2</sub> e)	Percent of Total 1990 Emissions	Total 2016 Emissions using IPCC AR4 (MMT CO <sub>2</sub> e)	Percent of Total 2016 Emissions
Transportation	150.7	35%	169.4	40%
Electric Power	110.6	26%	68.6	16%
Commercial	14.4	3%	12.9	3%
Residential	29.7	7%	24.2	6%
Industrial	103.0	24%	89.61	21%
Recycling and Waste <sup>a</sup>	–	–	8.8	2%
High GWP/Non-Specified <sup>b</sup>	1.3	<1%	19.8	5%
Agriculture/Forestry	23.6	6%	33.8	8%
Forestry Sinks	-6.7		-- <sup>c</sup>	--
<b>Net Total (IPCC SAR)</b>	<b>426.6</b>	<b>100%</b>	--	--
<b>Net Total (IPCC AR4) <sup>d</sup></b>	<b>431</b>	<b>100%</b>	<b>429.4</b>	<b>100%</b>

- <sup>a</sup> Included in other categories for the 1990 emissions inventory.
- <sup>b</sup> High GWP gases include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). High GWP gases are not specifically called out in the 1990 emissions inventory.
- <sup>c</sup> Revised methodology under development (not reported for 2012).
- <sup>d</sup> CARB revised the State's 1990 level GHG emissions using GWPs from the IPCC AR4.

SOURCES: California Air Resources Board, Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, (2007); California Air Resources Board, "California Greenhouse Gas 2000-2016 Inventory by Scoping Plan Category – Summary," (2018)[https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_scopingplan\\_sum\\_2000-16.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf). Accessed October 2018.

3

4 Between 1990 and 2016, the population of California grew by approximately 9.5 million (from  
 5 29.8 to 39.3 million) (U.S. Census Bureau, 2017). This represents an increase of approximately 32  
 6 percent from 1990 population levels. In addition, the California economy, measured as gross state  
 7 product, grew from \$773 billion in 1990 to \$2.62 trillion in 2016 representing an increase of  
 8 approximately 239 percent (just over three times the 1990 gross state product) (California  
 9 Department of Finance, 2017). Despite the population and economic growth, California's net GHG  
 10 emissions only declined by approximately 0.4 percent. According to CARB, the declining trend  
 11 coupled with the state's GHG reduction programs (such as the Renewables Portfolio Standard, Low  
 12 Carbon Fuel Standard, vehicle efficiency standards, and declining caps under the Cap and Trade  
 13 Program) demonstrate that California is on track to meet the 2020 GHG reduction target codified  
 14 in California Health and Safety Code (HSC), Division 25.5, also known as The Global Warming  
 15 Solutions Act of 2006 (AB 32) (CARB, 2016). California GHG emissions and the change in  
 16 emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from 2013 to 2015 are summarized below in **Table 3.8-3,**  
 17 *California Greenhouse Gas Emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O*.<sup>8</sup>

<sup>8</sup> The most recent annual GHG emission inventory released by CARB is for year 2015, which was released in June 2017.

1  
2

**TABLE 3.8-3  
CALIFORNIA GREENHOUSE GAS EMISSIONS OF CO<sub>2</sub>, CH<sub>4</sub>, AND N<sub>2</sub>O**

Sector	Gross GHG Emissions CO <sub>2</sub> e (million metric tons)		
	2014	2015	2016
Carbon Dioxide (CO <sub>2</sub> )	372.7	369.9	357.3
Methane (CH <sub>4</sub> )	39.6	39.0	38.9
Nitrous Oxide (N <sub>2</sub> O)	14.1	13.6	13.4
High Global Warming Potential Gases (HFC, PFC, SF <sub>6</sub> )	17.7	19	19.8
<b>Total GHG Emissions</b>	<b>444.1</b>	<b>441.4</b>	<b>429.4</b>

SOURCE: CARB, 2018a. Available at: [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_bygas.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_bygas.pdf). Accessed October 2018.

3

4 The San Joaquin Valley Air Pollution Control District (SJVAPCD) prepared a community-wide  
5 GHG inventory for all of Kern County in 2012 (Kern County, 2012). The year 2005 was used as the  
6 base year and county-wide GHG emissions were estimated to be 27 MMT CO<sub>2</sub>e. The Fossil Fuel  
7 Industry sector represented 40 percent of the 2005 total, followed by the Electricity Consumption  
8 sector at 22 percent. GHG emissions from electricity generation in Kern County were included in  
9 the County-wide GHG emissions, but not added in the totals. The County's 2005 GHG emissions,  
10 not including subtraction of sequestration sectors, are shown in **Table 3.8-4, Kern County 2005**  
11 *GHG Emissions Inventory*.

**TABLE 3.8-4  
KERN COUNTY 2005 GHG EMISSIONS INVENTORY**

Category	GHG Emissions (MMT CO <sub>2</sub> e/year)	Percent of Total
Electricity Production	13,002,127	*
Electricity Consumption	6,039,114	22%
Residential/Commercial/Industrial Combustions	1,281,498	5%
Transportation	4,569,913	17%
Fossil Fuels Industry	10,928,153	40%
Industrial Processes	1,852,124	7%
Waste Management	120,494	<1%
Agriculture Fugitives	2,024,470	7%
Forestry and Land Use	11,028	<1%
Other Sources	218,823	1%
<b>Total GHG Emissions and Percent</b>	<b>27,045,617</b>	<b>100%</b>

\* The Kern County GHG emissions inventory included emissions from electricity production for completeness purposes, but the sector was not included in the county wide description of emissions and therefore not included in the county-wide percentage of emissions.

SOURCE Kern County, 2012.

12

1 The County also forecasted what their 2020 GHG emissions would be, not including subtraction of  
 2 sequestration sectors. These forecasted emissions are shown in **Table 3.8-5, Kern County 2020**  
 3 *Forecasted GHG Emissions Inventory*.

**TABLE 3.8-5  
 KERN COUNTY 2020 FORECASTED GHG EMISSIONS INVENTORY**

Category	GHG Emissions (MMT CO <sub>2</sub> e/year)	Percent of Total
Electricity Production	18,455,958	*
Electricity Consumption	8,572,261	31%
Residential/Commercial/Industrial Combustions	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%
<b>Total GHG Emissions and Percent</b>	<b>27,272,709</b>	<b>100%</b>

\* The Kern County GHG emissions inventory included emissions from electricity production for completeness purposes, but the sector was not included in the county wide description of emissions and therefore not included in the county-wide percentage of emissions.

SOURCE Kern County, 2012.

4

5 ***Existing Greenhouse Gas Emissions at the Project Site***

6 As the project site is a vacant lot, there are no industrial, residential, or other emitters of GHGs  
 7 currently operating at the project site. There are no other existing onsite operations that result in  
 8 the combustion of fossil fuel, or otherwise result in direct anthropogenic emissions of GHGs onsite.  
 9 The existing desert ecosystem onsite, made up of plants and soils (including biological soil crusts),  
 10 provides ongoing natural carbon uptake as an ecosystem service (Wohlfahrt et al., 2008). completed  
 11 an evaluation of carbon uptake by a natural Mojave Desert ecosystem. Their study indicates that  
 12 desert ecosystems may result in the uptake of carbon in amounts as high as 102 to 110 grams per  
 13 square meter per year (g/m<sup>2</sup>yr); however, the study showed a high degree of uncertainty around  
 14 these amounts. Other studies have indicated lower carbon uptake amounts for desert habitats,  
 15 including between 10 and 30 g/m<sup>2</sup>yr, 46 g/m<sup>2</sup>yr, 70 g/m<sup>2</sup>yr, and 72 g/m<sup>2</sup>yr (Schlesinger et al., 2009).  
 16 Given the high variability of carbon uptake amounts identified in the scientific literature, this  
 17 analysis assumes that onsite ecosystems could uptake carbon at a rate of 63 g/m<sup>2</sup>yr based on the  
 18 average of the carbon uptake rates discussed above. Under existing conditions, this would equate  
 19 to a natural carbon uptake, expressed in CO<sub>2</sub>, of approximately 0.93 MT of CO<sub>2</sub> per acre per year.

20 Desert soils also store carbon as inorganic calcium carbonate (CaCO<sub>3</sub>) in the form of caliche. The  
 21 quantity, location, and depth of caliche deposits at the project site are not known, and feasible  
 22 methods for identifying and/or measuring caliche in soils throughout large sites such as the project  
 23 site have not been developed successfully. Studies suggest that the amount of stored inorganic

1 carbon in desert soils is dynamic, and that disturbance and resultant fragmentation of caliche  
2 deposits may make the CO<sub>2</sub> within CaCO<sub>3</sub> subject to loss, which could result in the emission of  
3 CO<sub>2</sub> from soils (Allen et al., 2013).

#### 4 ***Climate Change***

5 In the early 1960s, scientists recognized that carbon dioxide (CO<sub>2</sub>) levels in the atmosphere were  
6 rising every year. It was also noted that several other gases, including methane (CH<sub>4</sub>) and nitrous  
7 oxides (N<sub>2</sub>O) were also increasing. Levels of these gases have increased by about 40 percent since  
8 large-scale industrialization began around 150 years ago, according to the USEPA. After numerous  
9 computer-simulated model runs on the effects of these increases in the atmosphere, it was  
10 concluded that the rising concentrations almost always resulted in an increase of average global  
11 temperature. Rising temperatures may, in turn, produce changes in weather, sea levels, and land  
12 use patterns, commonly referred to as “climate change.” There is general scientific consensus that  
13 climate change is occurring and that human activity contributes in some measure (perhaps  
14 substantially) to that change. Human-caused emissions of GHGs, if not sufficiently curtailed, are  
15 likely to contribute further to continued increases in global temperatures. Increases in global  
16 temperatures will cause a reduction in the polar ice caps and an increase in sea level, which will  
17 result in flooding in low lying areas of the world. Additionally, climate change will shift rainfall  
18 patterns, which will cause significant impacts to agriculture and fresh water availability worldwide.

19 Both natural processes and human activities emit GHGs. The accumulation of GHGs in the  
20 atmosphere regulates the earth’s temperature; however, emissions from human activities such as  
21 electricity production and the use of motor vehicles have elevated the concentration of GHGs in  
22 the atmosphere. This accumulation of GHGs has contributed to an increase in the average  
23 temperature of the earth’s atmosphere and has contributed to global climate change. Of the principal  
24 GHGs (i.e., CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, PFCs, and HFCs), CO<sub>2</sub> is the most common reference gas for  
25 climate change.

26 As the concentrations of GHGs continue to increase in the atmosphere, the Earth’s surface  
27 temperature is also increasing, exceeding past levels. The Earth’s average surface temperature has  
28 increased by about 0.15 degrees Fahrenheit (°F) per decade since 1901. On average, the warmest  
29 global temperatures on record have all occurred between 2006 and 2015, with 2015 being the  
30 warmest on record (USEPA, 2016a). Climate models predict that the average temperature at the  
31 Earth’s surface could increase by 0.5 to 8.6°F by the end of this century if atmospheric GHG  
32 concentrations continue to increase (USEPA, 2017a).

33 Climate change affects people, plants, and animals. Scientists are certain that increasing the  
34 concentration of GHGs will change the planet’s climate; however, they are not sure by how much  
35 it will change, at what rate it will change, or what the exact effects will be. They are working to  
36 better understand future climate change and how the effects will vary by region and over time.

37 The scientific community’s understanding of the fundamental processes responsible for global  
38 climate change has improved over the past decade, and its predictive capabilities are advancing.  
39 However, there remain significant scientific uncertainties in, for example, predictions of local  
40 effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects

1 of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes  
2 in oceanic circulation. Due to the complexity of the Earth’s climate system and inability to  
3 accurately model it, the uncertainty surrounding climate change may never be completely  
4 eliminated. Nonetheless, the IPCC’s *Fifth Assessment Report, Summary for Policy Makers* states  
5 that, “it is *extremely likely* that more than half of the observed increase in global average surface  
6 temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas  
7 concentrations and other anthropogenic forc[es [sic] together” (IPCC, 2013a). A report from the  
8 National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most  
9 actively publishing in the field support the tenets of the IPCC in that climate change is very likely  
10 caused by human (i.e., anthropogenic) activity (Anderegg et al., 2010).

11 According to CARB, the potential impacts in California due to global climate change may include:  
12 loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; larger  
13 forest fires; more drought years; increased erosion of California’s coastlines and seawater intrusion  
14 into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest  
15 infestation (CalEPA, 2006). Below is a summary of some of the potential effects that could be  
16 experienced in California as a result of global warming and climate change.

17 Globally, climate change has the potential to impact numerous environmental resources through  
18 potential, though uncertain, impacts related to future air temperatures and precipitation patterns.  
19 The projected effects of global warming on weather and climate are likely to vary regionally, but  
20 are expected to include the following direct effects (IPCC, 2001):

- 21 • Higher maximum temperatures and more hot days over nearly all land areas,
- 22 • Higher minimum temperatures, fewer cold days and frost days over nearly all land areas,
- 23 • Reduced diurnal temperature range over most land areas,
- 24 • Increase of heat index over land areas, and
- 25 • More intense precipitation events.

26 Also, many secondary effects are projected to result from global warming, including global rise in  
27 sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.  
28 While the possible outcomes and feedback mechanisms involved are not fully understood, and  
29 much research remains to be done, the potential for substantial environmental, social, and economic  
30 consequences over the long term may be great.

31 Some of the potential resulting effects in California of global warming may include loss in  
32 snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest  
33 fires, and more drought years. A summary of some of these potential effects that could be  
34 experienced in California as a result of climate change is provided below.

### 35 **Air Quality**

36 Higher temperatures, conducive to air pollution formation, could worsen air quality in California.  
37 Climate change may increase the concentration of ground-level ozone, but the magnitude of the  
38 effect and, therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by

1 drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate  
2 air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could  
3 increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state  
4 (CalEPA, 2013). However, if higher temperatures are accompanied by wetter, rather than drier  
5 conditions, the rains would temporarily clear the air of particulate pollution and reduce the  
6 incidence of large wildfires, thus ameliorating the pollution associated with wildfires.

7 In 2009, the California Natural Resources Agency (CNRA) published the *California Climate*  
8 *Adaptation Strategy* as a response to the Governor’s EO S-13-2008 (CNRA, 2009). The CNRA  
9 report lists specific recommendations for state and local agencies to best adapt to the anticipated  
10 risks posed by a changing climate. In accordance with the *California Climate Adaptation Strategy*,  
11 the CEC was directed to develop a website on climate change scenarios and impacts that would be  
12 beneficial for local decision makers (CNRA, 2009). The website, known as Cal-Adapt, became  
13 operational in 2011.<sup>9</sup> The information provided on the Cal-Adapt website represents a projection  
14 of potential future climate scenarios. The data are comprised of the average values (i.e.,  
15 temperature, sea-level rise, snowpack) from a variety of scenarios and models and are meant to  
16 illustrate how the climate may change based on a variety of different potential social and economic  
17 factors. According to the Cal-Adapt website, the portion of the Kern County in which the project  
18 is located could result in an average increase in temperature of approximately 8 to 12 percent (about  
19 5.7 to 6.3°F) by 2070–2099, compared to the 1961–1990 period (Cal-Adapt, 2018).

## 20 **Water Supply**

21 Uncertainty remains with respect to the overall impact of global climate change on future water  
22 supplies in California. Studies have found that, “Considerable uncertainty about precise impacts of  
23 climate change on California hydrology and water resources will remain until we have more precise  
24 and consistent information about how precipitation patterns, timing, and intensity will change”  
25 (Pacific Institute, 2003). For example, some studies identify little change in total annual  
26 precipitation in projections for California while others show significantly more precipitation  
27 (Pacific Institute, 2003). Warmer, wetter, winters would increase the amount of runoff available  
28 for groundwater recharge; however, this additional runoff would occur at a time when some basins  
29 are either being recharged at their maximum capacity or are already full. Conversely, reductions in  
30 spring runoff and higher evapotranspiration because of higher temperatures could reduce the  
31 amount of water available for recharge (CNRA, 2014).

32  

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<sup>9</sup> The Cal-Adapt website address is: <http://cal-adapt.org>.

1 The California Department of Water Resources report on climate change and effects on the State  
2 Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta, concludes  
3 that “climate change will likely have a significant effect on California’s future water  
4 resources...[and] future water demand.” It also reports that “much uncertainty about future water  
5 demand [remains], especially [for] those aspects of future demand that will be directly affected by  
6 climate change and warming. While climate change is expected to continue through at least the end  
7 of this century, the magnitude and, in some cases, the nature of future changes is uncertain.” It also  
8 reports that the relationship between climate change and its potential effect on water demand is not  
9 well understood, but “[i]t is unlikely that this level of uncertainty will diminish significantly in the  
10 foreseeable future.” Still, changes in water supply are expected to occur, and many regional studies  
11 have shown that large changes in the reliability of water yields from reservoirs could result from  
12 only small changes in inflows (California Department of Water Resources, 2006). In its *Fifth*  
13 *Assessment Report*, the IPCC states “Changes in the global water cycle in response to the warming  
14 over the 21st century will not be uniform. The contrast in precipitation between wet and dry regions  
15 and between wet and dry seasons will increase, although there may be regional exceptions” (IPCC,  
16 2013a).

### 17 **Hydrology and Sea-Level Rise**

18 As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall and  
19 snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow  
20 events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal  
21 erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming  
22 through two main processes: expansion of seawater as the oceans warm, and melting of ice over  
23 land.

24 Since 1870 the global sea level has risen about 8 inches. The rising sea level increases the likelihood  
25 and risk of flooding. Future sea level rise will vary for different reasons but is expected to rise at a  
26 greater rate than during the past 50 years. Regional factors, such as land elevation changes that  
27 occur due to subsidence or uplifting, will influence the relative sea level rise for the coastlines  
28 around the world. However, global sea level rise of 1 to 4 feet could occur by 2100 (USEPA,  
29 2017a). A rise in sea levels could result in coastal flooding and erosion and could jeopardize  
30 California’s water supply. Increased storm intensity and frequency could affect the ability of flood-  
31 control facilities, including levees, to handle storm events.

### 32 **Agriculture**

33 California has a \$30 billion agricultural industry that produces half the country’s fruits and  
34 vegetables and has the highest crop value in the nation serving as an important source of the nation’s  
35 food supply. Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use  
36 efficiency. However, if temperatures rise and drier conditions prevail, water demand could  
37 increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution  
38 could render plants more susceptible to pest and disease outbreaks. In addition, temperature  
39 increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus  
40 affect their quality (California Climate Change Center, 2006).

## 1 **Ecosystems and Wildlife**

2 Increases in global temperatures and the potential resulting changes in weather patterns could have  
3 ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to  
4 accelerate the rate of climate change. Scientists expect that the average global surface temperature  
5 could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation (National Research  
6 Council, 2010). Soil moisture is likely to decline in many regions, and intense rainstorms are likely  
7 to become more frequent. Sea level could rise as much as 2 feet along most of the United States  
8 coastline. Rising temperatures could have four major impacts on plants and animals: (1) timing of  
9 ecological events; (2) geographic range; (3) species' composition within communities; and  
10 (4) ecosystem processes such as carbon cycling and storage (Parmesan and Galbraith, 2004).

## 11 **3.8.2 Environmental Consequences**

12 This section of the EIS/EIR describes the environmental consequences relating to greenhouse gas  
13 emissions for the Proposed Action. It describes the methods used to determine the effects of the  
14 project and lists the thresholds used to conclude whether an effect would be substantially adverse  
15 or significant. Where warranted, measures to mitigate (i.e., avoid, minimize, rectify, reduce,  
16 eliminate, or compensate for) significant impacts accompany each impact discussion.

### 17 **3.8.2.1 Assessment Methods/Methodology**

18 The assumptions associated with the emission estimates are detailed in a Memorandum titled  
19 Edwards Air Force Base Solar Facility Air Quality and Greenhouse Gas Emissions Methodology  
20 and Emissions Calculations (Dudek, 2018), prepared by Dudek, in Appendix B2 of this EIS/EIR.  
21 Project-generated GHG emissions were estimated using the California Emissions Estimator Model  
22 (CalEEMod) version 2016.3.2, the latest model available for both short-term construction and long-  
23 term operational GHG emissions. The use of CalEEMod is consistent with Kern County  
24 recommendations for project level review since CalEEMod uses current emission factors and  
25 default values and has the ability to quantify indirect air quality emissions and air quality mitigation  
26 (Kern County, 2006).

### 27 **Construction Assumptions**

28 Emissions from the construction phase of the project were estimated using CalEEMod. For  
29 purposes of estimating project emissions, and based on information provided by the project  
30 developer, this analysis assumed an original construction start date of July 2018 with construction  
31 ending in 2020, which yields a conservative estimate of emissions, as it assumed that construction  
32 activities would occur at the earliest feasible start date and applied the mobile source and fugitive  
33 dust emissions factors for that date.<sup>10</sup> Mobile source and fugitive dust emission factors are slightly  
34 less each year due to more stringent standards, so an earlier start date would result in higher

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<sup>10</sup> This analysis assumed a construction start date of July 2018, which represents the earliest date construction would be initiated at the time the Project was proposed. The earliest start date for construction of the Project represents the worst-case scenario for air quality and GHG emissions because equipment and vehicle emission factors for later years would be slightly less each year due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles. Thus, although construction will not occur until 2020, the analysis of construction starting in 2018 would be more conservative as this year would yield higher emissions than those in 2020. Therefore, the analysis provided in this Draft EIS/EIR is a conservative analysis and is still valid although the construction start date has been moved out two years.

1 emissions. Construction of the project has been pushed back and will now commence in July 2020  
2 and would last approximately 24 months, ending in July 2022. Since construction emissions  
3 decrease over time, this analysis is still valid and is a conservative estimate of project emissions,  
4 as it results in higher emissions than if the analysis were rerun using the new construction start date.

5 The phasing of construction activities described below represents the highest possible emissions;  
6 with all phases of solar facility construction happening directly after one another. The analysis  
7 contained herein is based on the following assumptions (duration of phases is approximate):

- 8 • Solar Facility Construction July 2020–July 2022 (24 months)
- 9 • Gen-tie Construction October 2020–July 2021 (9 months)

10 **Table 3.8-6, *Construction Equipment***, details the anticipated construction equipment, quantity, and  
11 usage for construction of the solar facility and the gen-tie. It also provides estimates for vehicle  
12 trips. The analysis assumes that heavy construction equipment would be operating at the site for  
13 approximately 8 hours per day, 5 days per week (22 days per month), during project construction.  
14 For construction it was assumed there would be an average of 550 peak daily workers for a total of  
15 1,100 one-way trips, 339 daily miscellaneous delivery trips, 504 daily water truck trips (vendor  
16 trucks) and 10 daily panel delivery trips (haul trips). No additional haul truck trips for earthwork  
17 materials were assumed because earthwork volumes are anticipated to be balanced onsite. Trip  
18 lengths for worker, vendor and haul trips were assumed to be 30, 7.3, and 114 miles respectively.  
19 Additionally, it was assumed that workers and vendors would travel 0.27 miles on unpaved roads  
20 each trip and haul trucks would travel 2.5 miles on unpaved roads each trip (Edwards AFB, 2017).

21

1  
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**TABLE 3.8-6  
CONSTRUCTION EQUIPMENT**

Construction Phase	Equipment		One-Way Vehicle Trips			
	Equipment Type	Quantity	Usage Hours	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips
Solar Facility Construction	Excavators	9	1.1			
	Forklifts	25	0.5			
	Generator Sets	4	8			
	Off-Highway Tractors	3	0.3			
	Off-Highway Tractors	3	0.5			
	Other Construction Equipment	30	2			
	Other Construction Equipment	20	1.1	1,100	843	5,200
	Other Material Handling Equipment	10	1.5			
	Rubber Tired Dozers	2	1.4			
	Scrapers	4	1.6			
	Tractors/Loaders/Backhoes	35	0.7			
	Trenchers	20	1.2			
Gen-Tie Construction	Cranes	1	1.6			
	Excavators	1	6			
	Other Construction Equipment	2	2			
	Other Construction Equipment	2	4	116	60	0
	Other Material Handling Equipment	1	4			
	Tractors/Loaders/Backhoes	1	4			

SOURCE: Dudek, 2017.

3

### **Operational Assumptions**

4

#### **Area Sources**

5

6 CalEEMod emission factors were used to estimate operational emissions from area sources, which  
7 include architectural coatings. VOC off-gassing emissions result from evaporation of solvents  
8 contained in surface coatings such as in paints and primers used during building maintenance. The  
9 VOC evaporative emissions from application of non-residential surface coatings were calculated  
10 based on the VOC emission factor, the building square footage, the assumed fraction of surface  
11 area, and the reapplication rate. The VOC emission factor is based on the VOC content of the  
12 surface coatings. Based on the type of structure for the Operation and Maintenance (O&M)  
13 building, it is assumed that the surface area for painting equals two times the floor square footage,  
14 with 75 percent assumed for interior coating and 25 percent assumed for exterior coating.

15

16 During operation and maintenance, one of the main sources of GHG emissions would be fugitive  
emissions from equipment containing SF<sub>6</sub> gas installed at the proposed onsite substations. SF<sub>6</sub> has

1 a GWP of 23,900 using CO<sub>2</sub> as a reference value with a GWP of 1 (UNFCCC, 2014). The only piece  
2 of project equipment that would have SF<sub>6</sub> gas would be the 230 kV breakers which would be located  
3 at the substation. It is estimated that the project would have up to three 230 kV breakers, for a total  
4 of 576 lbs of SF<sub>6</sub> gas. The proposed project's circuit breakers would have a maximum annual leak  
5 rate of 0.5 percent, based on the manufacturer's guaranteed specifications. The project would be  
6 required to report annual SF<sub>6</sub> gas emission, whether normal or accidental, to CARB under Title 17,  
7 Sections 95350 through 95339 of the California Code of Regulations.

8 Consumer products are various solvents used in non-industrial applications which emit ROG  
9 during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and  
10 toiletries. Landscaping are emissions from landscaping equipment that is used at the facility.

### 11 **Energy Sources**

12 Electricity use would contribute indirectly to GHG emissions; however, since GHG emissions  
13 occur at the site of the power plant, which is typically off site, they were not quantified for this  
14 project.

### 15 **Mobile Sources**

16 Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty  
17 trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel,  
18 or alternative fuels. Based on conservative estimates for vehicular travel, the project is anticipated  
19 to have up to 8,778 trips per year during operation, accounting for the commutes and performance  
20 of regular inspection and maintenance activities by 24 full-time-equivalent staff. Estimated activity  
21 data from the developer and CalEEMod were used to calculate emissions from this source category.

### 22 **Solid Waste**

23 The project would generate solid waste, and therefore, result in CO<sub>2</sub>e emissions associated with  
24 landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate  
25 GHG emissions associated with solid waste. Solid waste would be generated through maintenance  
26 activities and the O&M building.

### 27 **Water and Wastewater**

28 Supply, conveyance, treatment, and distribution of water for the project require the use of  
29 electricity, which would result in associated indirect GHG emissions. Similarly, wastewater  
30 generated by the proposed project requires the use of electricity for conveyance and treatment,  
31 along with GHG emissions generated during wastewater treatment. The project developer provided  
32 water consumption estimates for both indoor and outdoor water use and associated electricity  
33 consumption from water use and wastewater generation and emissions were estimated using  
34 CalEEMod.

### 35 **Off-Road Vehicles**

36 To conduct maintenance activities onsite, including but not limited to panel replacement and repair,  
37 it was assumed that two forklifts and two backhoes would be employed for 8 hours a day, 12 days  
38 a year. This information in conjunction with CalEEMod values were used to estimate operational  
39 off-road vehicle GHG emissions in CalEEMod.

1 **Carbon Sequestration**

2 Carbon sequestration is the process by which CO<sub>2</sub> is removed from the atmosphere and deposited  
3 into a carbon reservoir (e.g., vegetation). Trees and vegetation take in CO<sub>2</sub> from the atmosphere  
4 during photosynthesis, break down the CO<sub>2</sub>, store the carbon within plant parts, and release the  
5 oxygen back into the atmosphere. Operation of the solar facility would lead to a reduction in the  
6 rate of natural carbon sequestration because of the removal of desert vegetation and biological soil  
7 crust. The rate of carbon uptake for the project site is estimated to be 0.93 MT of CO<sub>2</sub> per acre per  
8 year (Wohlfahrt et al., 2008; Schlesinger, et al., 2009). It was conservatively assumed that all desert  
9 vegetation within the disturbed area of the project site would be removed.

10 **3.8.2.2 Determination of Impacts/Thresholds of Significance**

11 For this analysis, an environmental impact was considered significant related to air quality if it  
12 would result in any of the effects listed below. These effects are based on common NEPA standards,  
13 CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice.

14 **NEPA**

15 The methodology to assess impacts related to GHG emissions and climate change under NEPA is  
16 continuing to evolve as consensus forms as to how best to evaluate such effects at both proposed  
17 action-specific and cumulative levels. The Council on Environmental Quality (CEQ) published  
18 revised draft guidance on December 18, 2014, for federal agencies to improve their consideration  
19 of the effects of GHG emissions and climate change in their evaluation of proposals for federal  
20 actions under NEPA (CEQ,2014).<sup>11</sup> For example, the CEQ proposes that agencies consider the  
21 direct and indirect GHG emissions from a proposed action and its alternatives and quantify and  
22 disclose those emissions in the environmental document. The CEQ also recommends that agencies  
23 should consider implications of climate change for the environmental effects of a proposed action  
24 and that agencies consider mitigation measures to reduce proposed action-related GHG emissions  
25 from all phases and elements of the proposed action and alternatives over their expected life, subject  
26 to reasonable limits based on feasibility and practicality.

27 The CEQ recommends that agencies consider 25,000 MT of CO<sub>2</sub>e emissions on an annual basis as  
28 a reference point below which a quantitative analysis of greenhouse gas is not recommended unless  
29 it is easily accomplished based on available tools and data. Therefore, for the purposes of a  
30 conservative NEPA analysis, estimated GHG emissions are compared to a threshold of 25,000 MT  
31 CO<sub>2</sub>e per year, which is equivalent to the mandatory emissions reporting threshold, to determine  
32 whether the GHG emissions would contribute substantially to global climate change.

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<sup>11</sup> On August 1, 2016, the CEQ issued guidance to assist federal agencies in consideration of the effects of GHG emissions and climate change in their NEPA reviews (CEQ, 2016). However, the CEQ withdrew its final guidance for Federal agencies on how to consider greenhouse gas emissions and the effects of climate change in National Environmental Policy Act (NEPA) reviews, a Notice of Availability for which was published on August 5, 2016 (81 FR 51866). As explained in the Notice of Availability, the withdrawn guidance was not a regulation. Pursuant to EO 13783, "Promoting Energy Independence and Economic Growth," of March 28, 2017, the guidance has been withdrawn for further consideration. Therefore, this project would fall under the CEQ revised draft guidance on December 18, 2014.

1 **CEQA**

2 For this analysis, an environmental impact was significant related to greenhouse gas emissions if it  
3 would result in any of the effects listed below. These effects are based on common CEQA  
4 standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional  
5 practice. A project would have a significant impact related to GHG emissions if it would:

- 6 • Generate greenhouse gas emissions, either directly or indirectly, that may have a significant  
7 impact on the environment.
- 8 • Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing  
9 the emissions of greenhouse gases.

10 The County of Kern has not developed a quantified threshold of significance for GHG emissions,  
11 but a project found to contribute to a net decrease in GHG emissions and found to be consistent  
12 with the adopted implementation of the CARB AB 32 Scoping Plan is presumed to have less-than-  
13 significant GHG impacts. The EKAPCD adopted an addendum to their CEQA Guidelines to  
14 address GHG impacts, including quantitative thresholds for determining significance of GHG  
15 emissions. A project is considered to have a significant project or cumulatively considerable impact  
16 if it would result in GHG emissions that would exceed 25,000 tons per year (EKAPCD, 2012).

17 **3.8.3 Analysis of Environmental Effects**

18 **3.8.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)**

19 ***NEPA: Environmental Impacts***

20 Alternative A would result in GHG emissions from the construction, operation, and maintenance  
21 of the project. Project emissions were estimated and are shown in **Table 3.8-7, *Estimated Annual***  
22 ***Construction Greenhouse Gas Emissions***. Below is a discussion of the emissions and sources that  
23 would be associated with Alternative A.

24 ***Construction***

25 Alternative A would involve construction of the project over a 2-year schedule that would likely occur  
26 over three calendar years, (July 2020 through July 2022). GHG emissions would be generated onsite  
27 by off-road construction equipment and vehicles (e.g., excavators, tractors, trenchers, forklifts,  
28 cranes) that would be used to prepare the project site and construct the solar facility and associated  
29 gen-tie line, and offsite by vehicles that would transport workers to the work sites and haul panels  
30 and various materials and supplies to and from the site. For all assumptions used to estimate  
31 construction emissions, including the associated CalEEMod output files, refer to Appendix B2.

32 Table 3.8-6 shows the estimated GHG emissions that would be generated by construction activities  
33 for each calendar year during the 24-month construction period associated with Alternative A  
34 (construction occurs for 6 months in 2020, 12 months in 2021, and 6 months in 2022). As shown in  
35 the table, annual CO<sub>2</sub>e construction emissions associated with Alternative A would vary between  
36 4,060 and 8,083 MT per year, which would be well below the federal CEQ screening threshold of  
37 25,000 MT per year. Construction-related GHG emissions would not contribute substantially to  
38 global climate change.

1  
2

**TABLE 3.8-7  
 ESTIMATED ANNUAL CONSTRUCTION GHG EMISSIONS FOR ALTERNATIVE A**

Construction Emissions	Metric Tons per Year			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2020	3781.76	0.34	0.00	3,790.26
2021	7,591.43	0.68	0.00	7,608.45
2022	3,936.73	0.36	0.00	3,945.72
<b>Total Construction Emissions</b>	<b>15,309.83</b>	<b>1.38</b>	<b>0.00</b>	<b>15,344.43</b>
CEQ Significance Threshold				25,000
<b>Significance Threshold Exceeded?</b>				<b>NO</b>

NOTES: Refer to Appendix B2 for details regarding the GHG emissions estimates.  
 CH<sub>4</sub> = methane, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide

SOURCE: Dudek, 2018

3

4 As shown in Table 3.8-6, the estimated total GHG emissions during construction of Alternative A  
 5 would be approximately 3,790 MT CO<sub>2</sub>e in 2020, 7,608 MT CO<sub>2</sub>e in 2021 and 3,945 MT CO<sub>2</sub>e in  
 6 2022, for a total of 15,344 MT CO<sub>2</sub>e over the 2-year construction period. The construction period  
 7 total emissions of 15,344 MT CO<sub>2</sub>e is less than the CEQ 25,000 MT CO<sub>2</sub>e threshold and thus  
 8 Alternative A would not contribute substantially to global climate change. Additionally, since the  
 9 project is a renewable energy facility, operation of the proposed facility would potentially offset  
 10 GHG emissions that would have otherwise been generated by fossil-fuel power plants.

11 **Operation**

12 Once operational, GHG emissions generated by Alternative A would be limited to routine  
 13 maintenance and monitoring activities. Long-term GHG emissions would be generated from motor  
 14 vehicle trips to and from the project site; energy use (natural gas or electricity consumed by the  
 15 project); solid waste disposal; and generation of electricity associated with water supply, treatment,  
 16 and distribution and wastewater treatment. In addition to direct and indirect emissions of GHGs,  
 17 Alternative A would result in the clearing of land and potential complete removal of the existing  
 18 desert ecosystem over the entire project site. Land clearing would reduce the ongoing natural  
 19 carbon uptake by vegetation and biological soil crusts, where they occur. As discussed previously  
 20 in Section 3.8.1.3, studies of Mojave Desert vegetation indicate that the desert may uptake carbon  
 21 in amounts equivalent to 0.93 MT CO<sub>2</sub> per acre per year. It is assumed that the entire 4,000-acre  
 22 project site would be cleared and graded resulting in the removal of up to 4,000 acres of vegetated  
 23 desert ecosystem. Based on this conservative assumption, the maximum carbon uptake expressed  
 24 as CO<sub>2</sub> that would be eliminated as a result of project-related ground disturbance under Alternative  
 25 A would be about 3,720 MT CO<sub>2</sub> per year. As indicated in Section 3.8.1.3, the quantity, location,  
 26 and depth of caliche deposits at the project site are not known. No methodology has been developed  
 27 to gather such data on the site and the rate of potential loss of CO<sub>2</sub> from CaCO<sub>3</sub> due to disturbance  
 28 and/or vegetation removal is not currently known. Therefore, while it is assumed that some stored  
 29 inorganic carbon could be released from onsite soils as CO<sub>2</sub>, no quantitative method is available to  
 30 estimate the amount. For the estimated operation year (2020) project-generated GHG emissions

1 from area sources, energy usage, motor vehicles, solid waste generation, and water usage and  
 2 wastewater generation are shown in **Table 3.8-8, Estimated Operational Greenhouse Gas**  
 3 *Emissions*.

4 **TABLE 3.8-8**  
 5 **ESTIMATED ANNUAL OPERATIONAL GHG EMISSIONS FOR ALTERNATIVE A**

Operational Emissions	Metric Tons per Year			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Energy	0.00	0.00	0.00	0.00
Area	42.44	0.01	0.00	74.71 <sup>1</sup>
Mobile	99.35	0.01	0.00	99.53
Off-Road	4.89	0.01	0.00	4.93
Waste	7.63	0.45	0.00	18.91
Water	52.88	0.37	0.01	62.7
Lost Carbon Sequestration	3,720 <sup>2</sup>	0.00	0.00	3,720
<b>Total Net Operation Emissions*</b>	<b>3,919.56</b>	<b>0.83</b>	<b>0.01</b>	<b>3,948.65</b>
CEQ Significance Threshold				25,000
<b>Significance Threshold Exceeded?</b>				<b>NO</b>

NOTES: Refer to Appendix B2 for details regarding the GHG emissions estimates.  
 CH<sub>4</sub> = methane, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide  
<sup>1</sup> Includes emissions from SF<sub>6</sub> (576 pounds of SF<sub>6</sub> assuming a 5% leak rate = 31.22 MT CO<sub>2</sub>e per year)  
<sup>2</sup> 0.93 (Carbon Update factor)\* 4,000 acres = 3720 MT CO<sub>2</sub>e

SOURCE: Dudek, 2018

6  
 7 As shown in Table 3.8-8, the estimated annual GHG emissions from Alternative A would be  
 8 approximately 3,949 MT CO<sub>2</sub>e per year as a result of project operations. The operational total  
 9 emissions of 3,949 MT CO<sub>2</sub>e is below the CEQ significance threshold of 25,000 MT CO<sub>2</sub>e and thus  
 10 Alternative A would not contribute substantially to global climate change. Additionally, since the  
 11 project is a renewable energy facility, operation of the proposed facility would potentially offset  
 12 GHG emissions that would have otherwise been generated by fossil-fuel power plants. Alternative  
 13 A is expected to produce 1,847,040 megawatt-hours (MWh) per year. The latest published GHG  
 14 emission factor for SCE is 0.256 MT CO<sub>2</sub>e/MWh (SCE, 2017a). SCE reported that 28 percent of  
 15 its power mix was renewable in 2016 (CEC, 2017a). Therefore, the non-renewable GHG emission  
 16 factor would be 0.356 MT CO<sub>2</sub>e/MWh. Thus, Alternative A would provide a potential reduction of  
 17 656,752 MT CO<sub>2</sub>e per year if the renewable electricity generated by the project were to be used  
 18 instead of electricity generated by fossil-fuel sources. Annualized operational GHG emissions for  
 19 Alternative A are calculated to be 3,949 MT CO<sub>2</sub>e per year. Thus, the net reduction in GHG  
 20 emissions would be 652,776 MT CO<sub>2</sub>e per year and 19,583,280 MT CO<sub>2</sub>e over a 30-year project  
 21 lifetime. However, this reduction is not considered in the significance determination of the project's  
 22 GHG emissions, but is provided for disclosure purposes.

1 **Decommissioning**

2 GHG emissions would be generated by decommissioning activities for each calendar year during  
3 the 24-month decommissioning period associated with Alternative A. It is anticipated that GHG  
4 emissions that would be associated with decommissioning of the project would be similar to those  
5 that would be generated during the construction phase of the project, which would be well below  
6 the federal CEQ screening threshold of 25,000 metric tons per year.

7 **Emissions Impact Discussion**

8 Implementation of Alternative A would not have a substantial GHG impact under NEPA because  
9 construction and operational activities would result in GHG emissions that would be substantially  
10 less than the 25,000 MT CO<sub>2</sub>e NEPA threshold and the long-term operation of this alternative  
11 would result in a net decrease in annual CO<sub>2</sub>e emissions as described above. Additionally,  
12 implementation of Mitigation Measures MM 3.3-1b through MM 3.3-7b for the gen-tie portion of  
13 the project, would further mitigate emissions impacts resulting from the proposed action.

14 **Climate Change Effects on the Proposed Action**

15 In addition to global warming, climate change is expected to result in a suite of additional potential  
16 changes that could affect the natural environment, including hydrologic resources (e.g., sea-level  
17 rise and flooding), water resource availability, and impacts to biological resources. Many potential  
18 changes would not affect the project due to its location and geography (the Mojave Desert at 2,500  
19 feet above mean sea level). A summary of issues and hazards that could affect the project are  
20 discussed below.

21 **Hydrologic Resources**

22 Climate change is anticipated to affect the frequency and intensity of extreme weather events,  
23 including large storm events and more severe droughts in western watersheds (CDWR, 2008;  
24 2011). The project site and its vicinity could experience an increase in the intensity of high rainfall  
25 and flood events, which could result in greater stormwater runoff, flash flooding, an increase in soil  
26 erosion onsite, and sedimentation onsite and downstream from the site. As discussed in Section  
27 3.16, *Hydrology and Water Quality*, Mitigation Measure MM 3.16-5b for the gen-tie portion of the  
28 site, includes the preparation of a Drainage Plan. Implementation of this plan would minimize or  
29 avoid the degradation of the project site from increased runoff, especially during major storm  
30 events.

31 **Water Resources Availability**

32 As discussed in Section 3.16, *Hydrology and Water Quality*, the project site and immediate vicinity  
33 contain only ephemeral drainages and washes. Surface waters in the project area and its immediate  
34 vicinity occur only during substantial precipitation events, when surface runoff occurs. Climate  
35 change is expected to result in some degree of reduction of precipitation, and periods of drought  
36 could increase, resulting in an overall reduction in the availability of water in the project area.

37 In the event that climate change results in reduced precipitation within the project area and its  
38 vicinity, some degree of associated reduction in groundwater recharge from rainfall could occur.  
39 This situation would not result in increased water requirements by the project, and would not result

1 in additional groundwater pumping during project construction, operation, and maintenance.  
2 Therefore, even with potential reductions in total precipitation volume associated with future  
3 climate change, no increase in water use would be required.

#### 4 **Other Issues**

5 In addition to the resource issues discussed above, potential climate change-related impacts  
6 associated with soil moisture and fugitive dust concentrations also could have effects on the project  
7 site.

8 **Soil Moisture.** Much of the rainfall that occurs in this region of California is lost through  
9 evaporation and evapotranspiration. Soil moisture at the project site is characteristically low.  
10 Although precise changes are impossible to predict, climate change could result in the increase of  
11 extreme weather events, including droughts, heat waves, and an overall reduction in precipitation.  
12 These conditions could result in a concurrent reduction in soil moisture content at the site and  
13 regionally. However, reductions in soil moisture content would not substantially affect operation  
14 and maintenance, and would not require any change in water resources usage. Additionally, the  
15 proposed facilities would in no way support additional drying of soils onsite, or otherwise  
16 exacerbate potential changes in soil moisture associated with climate change.

17 **Fugitive Dust.** As discussed in Chapter 2, *Proposed Action, Project Description, and Alternatives*,  
18 operation and maintenance would include panel washing to remove dust and dirt build-up on solar  
19 panels, which reduces the amount of incoming solar radiation striking the active photovoltaic layer  
20 within the panel. Although climate change could result in some degree of reduction of soil moisture,  
21 as discussed above, soil moisture is already very low under current conditions. Any further  
22 reductions in soil moisture would be inconsequential in terms of the absolute amount of water  
23 contained in onsite soils. Therefore, any potential further reductions in soil moisture associated  
24 with climate change are not anticipated to result in a substantial increase in fugitive dust emissions.

#### 25 **Hazards**

26 Heat-related hazards, including potential increases in wildland fire and heat waves, could be  
27 exacerbated by climate change (IPCC, 2013b; International Strategy for Disaster Reduction, 2008).

28 **Wildland Fire Risks.** Climate change generally would result in a small increase in temperature,  
29 and also could result in an increase in the frequency of extreme weather events that could generate  
30 wildfires, such as increased frequency of drought and heat waves (IPCC, 2013b; ISDR, 2008)  
31 during operation of Alternative A. Although the risk of wildfire that could affect the site could  
32 increase as a result of climate change, these potential increases in risk are expected to be offset by  
33 ongoing compliance with the worker safety and fire protection regulations. Therefore, no additional  
34 mitigation is recommended.

35 **Heat Waves.** The frequency of occurrence and the severity of heat waves could increase as a result  
36 of climate change (IPCC, 2013b; ISDR, 2008). Heat waves could result in increased potential risk  
37 to employees. However, the selected developer would be required to meet state requirements for  
38 worker safety associated with heat stress. No supplemental actions are recommended.

1 **CEQA: Impact Significance Determination**

2 **Impact 3.8-1: The project would generate greenhouse gas emissions, either directly or**  
3 **indirectly, that may have an impact on the environment.**

4 As described in the NEPA discussion, implementation of the project would result in construction  
5 and operational activities that would generate GHG emissions up to 15,344.43 MT CO<sub>2</sub>e over the  
6 three years of construction, which is equivalent to 16,914.34 tons per year. These short-term  
7 emissions would be below the EKAPCD's threshold of 25,000 tons CO<sub>2</sub>e per year, and would  
8 represent a less-than-significant impact. In addition, long-term operation of the project would result  
9 in a net reduction in emissions, resulting in a beneficial impact.

10 Alternative A would also be consistent with the strategies recommended by California's Climate  
11 Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Scoping  
12 Plan relies on achievement of the 33 percent RPS by 2020 (see Impact 3.8-2 discussion for details).  
13 The project and other similar projects are essential to achieving the RPS. Further, the project is  
14 reasonably expected to displace region-wide and statewide emissions of GHGs over the expected  
15 life of the project. Additionally, implementation of Mitigation Measures MM 3.3-1b through MM  
16 3.3-6b for the gen-tie portion of the project, would further mitigate emissions impacts resulting  
17 from the proposed action.

18 **Mitigation Measures**

19 Implement Mitigation Measures MM 3.3-1b through MM 3.3-6b for the gen-tie portion of the  
20 project (see Section 3.3.5 for mitigation measures).

21 **Level of Significance after Mitigation**

22 Impacts would be less than significant.

23 **Impact 3.8-2: The project could conflict with an applicable plan, policy, or regulation adopted**  
24 **for the purpose of reducing the emissions of GHGs.**

25 Implementation of CARB's Scoping Plan Measures/Recommended Actions discussed in Section  
26 3.8.1.2 are needed to obtain AB 32 goals. Of the measures identified in the CARB Scoping Plan,  
27 one measure (i.e., Action E-3) is considered to be applicable to the project. Action E-3 relates to  
28 renewable energy and the RPS, which is intended to increase California's renewable energy  
29 production to 20 percent by 2010, and to 33 percent by 2020. The CPUC estimates that this  
30 percentage is currently at 30 percent (CEC, 2017a). A key prerequisite to reaching a target of 33  
31 percent renewables would be to provide sufficient electric transmission lines to renewable resource  
32 zones and system changes to allow integration of large quantities of intermittent wind and solar  
33 generation. Alternative A would include a solar array with an electric power generating capacity of  
34 at least 21 megawatts (MW). Therefore, the project would be consistent with Action E-3. Overall,  
35 Alternative A would be consistent with the applicable Recommended Actions of the CARB  
36 Scoping Plan. Additionally, implementation of Mitigation Measures MM 3.3-1b through MM 3.3-  
37 6b for the gen-tie portion of the project, would further ensure consistency with the applicable plans,  
38 policies, or regulations associated with the proposed action. Therefore, this impact would be less  
39 than significant.

1 **Mitigation Measures**

2 Implement Mitigation Measures MM 3.3-1b through MM 3.3-6b for the gen-tie portion of the  
3 project (see Section 3.3.5 for mitigation measures).

4 **Level of Significance after Mitigation**

5 Impacts would be less than significant.

6 **3.8.3.2 Alternative B: 1,500-Acre EUL**

7 ***NEPA: Environmental Impacts***

8 Implementation of Alternative B would include the construction of a solar facility on approximately  
9 1,500 acres of land located within the same site as Alternative A. It is estimated that the construction  
10 duration for Alternative B would be approximately 9 months, which would be 15 months less than  
11 Alternative A due to the reduced size of the facility. Given the reduced size of Alternative B  
12 compared to Alternative A (i.e., 1,500 acres compared to 4,000 acres – a 62.5 percent reduction),  
13 it is assumed that the power rating of the Alternative B facility would be reduced proportionately  
14 to at least 8 MW (Alternative A power rating is at least 21 MW). Alternative B would utilize the  
15 same gen-tie line route proposed in Alternative A.

16 The construction and operation emissions for Alternative B were estimated by scaling the model  
17 input for Alternative A based on attributes (i.e., area of disturbance, MW rating, and total months  
18 of construction) of Alternative B compared to attributes of Alternative A. **Table 3.8-9, *Estimated***  
19 ***Construction GHG Emissions for Alternative B***, summarizes GHG emissions associated with  
20 construction of Alternative B. As noted in the table, GHG emissions during the first calendar year  
21 of construction would be the same as for Alternative A at about 3,782.10 MT CO<sub>2</sub>e since it is the  
22 same amount of construction time; however, emissions during the second year would be 1,902.28  
23 MT CO<sub>2</sub>e, which would be approximately 25 percent of those that would be generated under  
24 Alternative A (as only 3 months of construction would occur), and there would be no third calendar  
25 year of construction emissions. The maximum annual GHG emissions generated during  
26 construction of Alternative B would be 5,684.38 MT CO<sub>2</sub>e, which would be well below the federal  
27 CEQ screening threshold of 25,000 MT per year. The scale of decommissioning under Alternative  
28 B would be similarly reduced compared to Alternative A. The maximum annual GHG emissions  
29 generated during the construction and decommissioning phases of Alternative B would be 5,684  
30 metric tons CO<sub>2</sub>e, which would be well below the federal CEQ screening threshold of 25,000  
31 metric tons per year. GHG emissions associated with construction of Alternative B would not  
32 contribute substantially to global climate change.

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**TABLE 3.8-9  
ESTIMATED ANNUAL CONSTRUCTION GHG EMISSIONS FOR ALTERNATIVE B**

Construction Emissions	Metric Tons per Year			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2020	3,781.76	0.34	0.00	3,782.10
2021	1,902.11	0.17	0.00	1,902.28
<b>Total Construction Emissions</b>	<b>5,683.87</b>	<b>0.51</b>	<b>0.00</b>	<b>5,684.38</b>
CEQ Significance Threshold				25,000
<b>Significance Threshold Exceeded?</b>				<b>NO</b>

NOTES: 2020 emissions are the same as Alternative A, 2021 emissions are 25% of Alternative A (3 months vs 12 months)  
CH<sub>4</sub> = methane, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide

SOURCE: ESA, 2018

3

4 Under Alternative B, the project would have a power rating of 8 MW as opposed to 21 MW under  
5 Alternative A (a 62.5 percent reduction). Therefore, to estimate operational emissions, the totals  
6 were scaled by 62.5 percent. **Table 3.8-10, Estimated Annual Operational GHG Emissions for**  
7 *Alternative B*, presents the operational emissions by category associated with Alternative B.  
8 Additionally, since Alternative B would disturb approximately 1,500 acres of vegetated desert  
9 ecosystem, it would result in the elimination of 1,395 MT CO<sub>2</sub> carbon uptake each year (62.5  
10 percent of the amount of carbon uptake that would be lost under Alternative A). Alternative B  
11 would displace 6,233 MT CO<sub>2</sub>e associated with fossil fuel-generated energy, which is also 62.5  
12 percent of that displaced under Alternative A.

13  
14

**TABLE 3.8-10  
ESTIMATED ANNUAL OPERATIONAL GHG EMISSIONS FOR ALTERNATIVE B**

Operational Emissions	Metric Tons per Year			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Energy	0.00	0.00	0.00	0.00
Area	15.92	0.00	0.00	15.92 <sup>1</sup>
Mobile	37.26	0.00	0.00	37.26
Off-Road	1.83	0.00	0.00	1.83
Waste	2.86	0.17	0.00	3.03
Water	19.83	0.14	0.00	19.97
Lost Carbon Sequestration	1,395 <sup>2</sup>	0.00	0.00	1,395
<b>Total Net Operation Emissions*</b>	<b>1,472.7</b>	<b>0.31</b>	<b>0.00</b>	<b>1,473.01</b>
CEQ Significance Threshold				25,000
<b>Significance Threshold Exceeded?</b>				<b>NO</b>

NOTES: CH<sub>4</sub> = methane, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide

<sup>1</sup> Includes emissions from SF<sub>6</sub> (576 pounds of SF<sub>6</sub> assuming a 5% leak rate = 31.22 MT CO<sub>2</sub>e per year)

<sup>2</sup> 0.93 (Carbon Update factor)\* 1,500 acres = 1395 MT CO<sub>2</sub>e

SOURCE: ESA 2018

1 As shown in Table 3.8-10, operation of Alternative B would result in approximately 1,473 MT  
2 CO<sub>2</sub>e emissions per year, which would be well below the federal CEQ screening threshold of  
3 25,000 MT CO<sub>2</sub>e per year. Thus, GHG emissions associated with construction of Alternative B  
4 would not contribute substantially to global climate change. Additionally, since the project is a  
5 renewable energy facility, operation of the proposed facility would potentially offset GHG  
6 emissions that would have otherwise been generated by fossil-fuel power plants.

7 Alternative B is expected to produce approximately 700,800 MWh per year. The latest published  
8 GHG emission factor for SCE is 0.256 MT CO<sub>2</sub>e/MWh (SCE, 2017). SCE reported that 28 percent  
9 of its power mix was renewable in 2016 (CEC, 2017a). Therefore, the non-renewable GHG  
10 emission factor would be 0.356 MT CO<sub>2</sub>e/MWh. Thus, Alternative B would provide a potential  
11 reduction of 249,484 MT CO<sub>2</sub>e per year if the renewable electricity generated by the project were  
12 to be used instead of electricity generated by fossil-fuel sources. Annualized operational GHG  
13 emissions for Alternative B are calculated to be 1,473 MT CO<sub>2</sub>e per year. Thus, the net reduction  
14 in GHG emissions would be 248,001 MT CO<sub>2</sub>e per year and 7,440,330 MT CO<sub>2</sub>e over a 30-year  
15 project lifetime. However, this reduction is not considered in the significance determination of the  
16 project's GHG emissions, but is provided for disclosure purposes.

17 Potential climate change effects on Alternative B would be substantially the same as those  
18 discussed for Alternative A (see Section 3.8.3.1).

### 19 ***CEQA: Impact Significance Determination***

20 As described in the NEPA discussion, implementation of Alternative B would result in construction  
21 activities that would generate short-term GHG emissions up to 5,684.38 MT CO<sub>2</sub>e per year, which  
22 converts to 6,265.96 tons CO<sub>2</sub>e per year. These short-term emissions would be below the  
23 EKAPCD's threshold of 25,000 tons CO<sub>2</sub>e per year, and would represent a less-than-significant  
24 impact. Long-term operation of Alternative B would result in a net reduction in emissions, resulting  
25 in a beneficial impact. In addition, Alternative B would be consistent with the strategies  
26 recommended by California's Climate Change Scoping Plan. Therefore, Alternative B would not  
27 conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the  
28 emissions of GHGs.

### 29 **Mitigation Measures**

30 No mitigation measures are required.

### 31 **Level of Significance**

32 Impacts would be less than significant.

### 33 **3.8.3.3 Alternative C: No Action/No Project**

#### 34 ***NEPA: Environmental Impacts***

35 Under this alternative, none of the components under Alternative A would be built. If Alternative  
36 C were implemented, there would be no changes to onsite conditions or the existing environmental  
37 setting as described above. There would be no construction, operation, or decommissioning of the  
38 site, therefore, there would be no generation of GHG emissions. Thus, Alternative C would not

1 cause any impact to global climate change. However, if Alternative A is not built, approximately  
2 656,752 MT CO<sub>2</sub>e per year of emissions from electricity generated by fossil-fuel sources would  
3 not be reduced by renewable electricity from solar energy production.

#### 4 **CEQA: Impact Significance Determination**

5 Alternative C would result in no impacts to global climate change. However, if Alternative A is not  
6 built, approximately 656,752 MT CO<sub>2</sub>e per year of emissions from electricity generated by fossil-  
7 fuel sources would not be reduced by renewable electricity from solar energy production.

#### 8 **Mitigation Measures**

9 No mitigation measures are required.

#### 10 **Level of Significance**

11 No impact.

### 12 **3.8.4 Cumulative Impact Analysis**

#### 13 **3.8.4.1 NEPA: Cumulative Environmental Effects and Their** 14 **Significance**

15 GHG emissions are inherently a cumulative concern because it is the accumulation of GHG  
16 emissions in the atmosphere around the Earth that results in global climate change; therefore, the  
17 geographic scope of cumulative impacts related to GHG emissions and climate change is global.  
18 The action alternatives would result in short-term GHG emissions during construction, limited  
19 long-term GHG emissions during operation and maintenance, and would result in a long-term  
20 reduction of carbon sequestration at the site. However, Alternative A would result in a beneficial  
21 effect on cumulative GHG emissions by reducing emissions by 652,776 MT CO<sub>2</sub>e per year and  
22 Alternative B would reduce emissions approximately 248,001 MT CO<sub>2</sub>e per year (approximately  
23 one-third that of Alternative A). The long-term cumulative effect that would be associated with  
24 either of the action alternatives would be beneficial.

#### 25 **3.8.4.2 CEQA: Cumulative Impact Significance Determination**

26 Although construction of the action alternatives would result in a short-term contribution to  
27 cumulative GHG emissions in California, operation of either of the action alternatives would result  
28 in a long-term offset of emissions from the electricity generation sector. It is estimated that  
29 Alternative A would result in a net reduction of approximately 652,776 MT CO<sub>2</sub>e each year, and  
30 Alternative B would result in a net reduction of approximately 248,011 MT CO<sub>2</sub>e each year.  
31 Overall, neither of the action alternatives would contribute cumulatively to long-term GHG  
32 emissions in California. Additionally, implementation of Mitigation Measures MM 3.3-1b through  
33 MM 3.3-6b for the gen-tie portion of the project, would further ensure that the proposed action  
34 would not contribute cumulatively to long-term GHG emissions in California. Thus, Alternative A  
35 or Alternative B would not have a cumulatively considerable impact on global climate change, and  
36 the overall cumulative impact would therefore be beneficial.

1 **3.8.5 Mitigation Measures**

2 Implement Mitigation Measures MM 3.3-1b through MM 3.3-6b for the gen-tie portion of the  
3 project. (See Section 3.3, *Air Quality*, for the full mitigation measure).

4 **3.8.6 Residual Impacts**

5 There would be no significant impacts or substantial effects related to GHG as a result of project  
6 implementation and, therefore, there would be no potential for residual impacts to occur.

## 3.9 Hazardous Materials and Safety

### 3.9.1 Affected Environment

This EIS/EIR section describes the affected environment for hazardous materials and safety in the proposed project area, including the regulatory and environmental settings. This section also describes the project's potential impacts on sensitive receptors that could be exposed to multiple hazard types and presents mitigation measures where applicable.

The information provided in this section is based in part on the Hazards Assessment Memorandum for the Edwards Air Force Base (AFB) Solar Project (Dudek, 2018), located in Appendix B10, of this EIS/EIR. Information regarding the environmental, health, and safety aspects of potentially hazardous materials used in some solar panel technology is based on studies presented in Appendix B1 of this EIS/EIR.

#### 3.9.1.1 Scoping Issues Addressed

During the scoping period for the EIS/EIR (November 27, 2017, through December 27, 2017), one scoping meeting was conducted with the public and government agencies, and written comments provided by the Kern County Public Health Services Department and the California Department of Toxic Substances Control (DTSC) were received that identified the following issues and concerns related to hazardous materials and waste. These issues and concerns are addressed in this section:

- A business plan should be submitted to the Hazardous Materials Division of the Kern County Environmental Health Division for hazardous materials stored or generated onsite.
- The EIS/EIR should include a mitigation measure for the preparation and implementation of a comprehensive Spill Prevention and Response Plan that outlines the site-specific monitoring requirements and necessary BMPs to prevent hazardous material spills or to contain and cleanup a hazardous material spill, should one occur.

#### 3.9.1.2 Regulatory Framework

##### *Federal*

##### **U.S. Environmental Protection Agency**

The U.S. Environmental Protection agency (USEPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The USEPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards are not met, the USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

1 **Federal Toxic Substances Control Act/Resource Conservation and Recovery**  
2 **Act/Hazardous and Solid Waste Act**

3 The federal Toxic Substances Control Act of 1976 (15 United States Code [USC] 2601–2697)  
4 and the Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC 6901–6992)  
5 established programs administered by the USEPA for regulation of the generation, transportation,  
6 treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the  
7 Hazardous and Solid Waste Act (PL 98-616), which affirmed and extended the “cradle-to-grave”  
8 system of regulating hazardous wastes. The use of certain techniques for the disposal of some  
9 hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act. Under the  
10 authority of RCRA, the regulatory framework for managing hazardous waste, including  
11 requirements for entities that generate, store, transport, treat, and dispose of hazardous waste, is  
12 found in Title 40 of the Code of Federal Regulations (CFR) Sections 260–299.

13 **U.S. Department of Transportation**

14 The U.S. Department of Transportation regulates hazardous materials transportation under Title  
15 49 of the USC. State agencies with primary responsibility for enforcing federal and state  
16 regulations and responding to hazardous materials transportation emergencies are the California  
17 Highway Patrol and the California Department of Transportation. These agencies also govern  
18 permitting for hazardous materials transportation. Title 49 of the CFR reflects laws passed by  
19 Congress as of January 2, 2006.

20 **Comprehensive Environmental Response, Compensation, and Liability Act/Superfund**  
21 **Amendments and Reauthorization Act**

22 The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of  
23 1980 (42 USC 9601–9675), commonly known as “Superfund,” was enacted by Congress on  
24 December 11, 1980. This law provided broad federal authority to respond directly to releases or  
25 threatened releases of hazardous substances that may endanger public health or the environment.  
26 CERCLA established requirements concerning closed and abandoned hazardous waste sites,  
27 provided for liability of persons responsible for releases of hazardous waste at these sites, and  
28 established a trust fund to provide for cleanup when no responsible party could be identified.  
29 CERCLA also enabled the revision of the National Contingency Plan. The National Contingency  
30 Plan provided the guidelines and procedures needed to respond to releases and threatened releases  
31 of hazardous substances, pollutants, or contaminants.

32 **Clean Water Act/Spill Prevention, Control, and Countermeasure Rule**

33 The Clean Water Act (CWA) (33 USC 1251 et seq., formerly the Federal Water Pollution Control  
34 Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and  
35 biological integrity of waters of the United States. As part of the CWA, the USEPA oversees and  
36 enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred  
37 to as the “SPCC rule” because the regulations describe the requirements for facilities to prepare,  
38 amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is  
39 subject to SPCC regulations if the total aboveground oil storage capacity exceeds 1,320 gallons,  
40 or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the  
41 facility could reasonably be expected to discharge oil into or upon the “Navigable Waters” of the  
42 United States.

1 **Storage, treatment, and disposal of nondefense toxic and hazardous materials (10 USC**  
2 **Section 2692).**

3 10 USC Section 2692 is a federal statute limiting and settling forth requirements for storage by  
4 non-Department of Defense (DoD) entities of toxic or hazardous materials on DoD installations.  
5 However, the statute contains an exception for the storage, treatment, or disposal of materials that  
6 will be or have been used in connection with an activity of the DoD or in connection with a  
7 service to be performed on a DoD installation for the benefit of DoD. The 20-acre battery storage  
8 facility will contain a large quantity of hazardous materials. Here, Edwards AFB will use some of  
9 the energy generated by the solar project and benefits financially from the energy generation  
10 service being sited on the installation so the exception applies.

11 **Occupational Safety and Health Administration**

12 The mission of the Occupational Safety and Health Administration's (OSHA) is to ensure the  
13 safety and health of American workers by setting and enforcing standards; providing training,  
14 outreach, and education; and encouraging continual improvement in workplace safety and health.  
15 OSHA's staff establishes and enforces protective standards and reaches out to employers and  
16 employees through technical assistance and consultation programs. OSHA standards are listed in  
17 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify  
18 potential hazards associated with a proposed land use and may provide appropriate mitigation  
19 measures as required.

20 29 CFR Section 1910.120(e) requires all employees working on site exposed to hazardous  
21 substances, health hazards, or safety hazards and their supervisors and management responsible  
22 for the site to receive training meeting the requirements of this paragraph before they are  
23 permitted to engage in hazardous waste operations that could expose them to hazardous  
24 substances, safety, or health hazards. These employees shall receive any necessary review  
25 training.

26 **National Weather Service**

27 Under extreme fire weather conditions, the National Weather Service (NWS) issues Red Flag  
28 Warnings for all affected areas. A Red Flag Warning means that any ignition could result in a  
29 large-scale damaging wildfire. The project site is located in the NWS Hanford region. Red Flag  
30 Warning criteria are as follows:

- 31 • Relative humidity 15 percent or less with either sustained winds of 25 miles per hour (mph)  
32 or greater or frequent gusts of 35 mph or greater (for duration of 6 hours or more);
- 33 • Relative humidity 10 percent or less with 15 mph sustained winds or greater or frequent gusts  
34 of 25 mph (for duration of 6 hours or more); and
- 35 • Relative humidity of 15 percent or less with 25 mph sustained winds (for duration of 8 hours  
36 or more) (NWS, 2012).

37 The **Defense Environmental Restoration Program (DERP)** requires the Secretary of Defense to  
38 carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary,  
39 including all active installations, installations subject to base realignment and closure, and

1 formerly used defense sites. The Army, Navy, Air Force, and Defense Logistics Agency each  
2 manage their own cleanup programs. The Office of the Secretary of Defense, through the Deputy  
3 Under Secretary of Defense (Installations and Environment), provides program guidance and  
4 management oversight for DERP.

5 The **Edwards AFB Hazardous Waste Management Plan (HWMP)** is the primary guidance  
6 document for hazardous waste minimization and management at Edwards AFB (USAF, 2018).

### 7 **State**

8 California Government Code Section 65962.5 requires that information regarding environmental  
9 impacts of hazardous substances and wastes be maintained and provided at least annually to the  
10 Secretary for Environmental Protection. The list, commonly referred to as the Cortese List, must  
11 contain the following information: sites impacted by hazardous wastes, underground storage  
12 tanks with unauthorized releases, solid waste disposal facilities from which there is migration of  
13 hazardous wastes, and all cease and desist and cleanup and abatement orders. This information is  
14 maintained by various agencies, including DTSC, the State Water Resources Control Board, and  
15 the local (typically, county) Certified Unified Program Agency (CUPA). As many records are  
16 now maintained digitally and each of the agencies has their own database, the Cortese List is no  
17 longer compiled as one list.

### 18 **California Department of Conservation, Division of Oil, Gas, and Geothermal Resources**

19 California Department of Conservation, Division of Oil, Gas, and Geothermal Resources  
20 (DOGGR) is a state agency and responsible for supervising the drilling, operation, maintenance,  
21 plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program  
22 promotes the sensitive development of oil, natural gas, and geothermal resources in California  
23 through sound engineering practices, pollution prevention, and the implementation of public  
24 safety programs. DOGGR requires any construction above or near plugged or abandoned oil and  
25 gas wells to be avoided, and remediation of wells to meet current DOGGR standards, including  
26 wells discovered during excavation or grading.

### 27 **California Public Utilities Commission General Order 95: Rules for Overhead Electric Line** 28 **Construction**

29 General Order 95 (GO 95) is the key standard governing the design, construction, operation, and  
30 maintenance of overhead electric lines within the State of California. It was adopted in 1941 and  
31 updated recently in 2012. GO 95 includes safety standards for overhead electric lines, including  
32 minimum distances for conductor spacing, minimum conductor ground clearance, standards for  
33 calculating maximum sag, electric line inspection requirements, and vegetation clearance  
34 requirements. Inspection requirements, specified by Rule 31.2, and vegetation clearance  
35 requirements, specified by Rule 35, are summarized below:

- 36 • Rule 35, Appendix E defines minimum vegetation clearances around power lines. A four-foot  
37 radial clearance is required for any conductor of a line operating between 2,400 volts and  
38 72,000 volts (2.4 kiloVolt [kV] and 72 kV) (CPUC, 2016). (Note: This requirement would  
39 apply to the proposed project's 34.5).

- Rule 31.2, Inspection of Lines requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service are to be inspected and maintained so as not to create a hazard.

#### **Power Line Hazard Reduction (PRC 4292)**

Public Resources Code (PRC) Section 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, Title 14 of the California Code of Regulations (CCR) Section 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 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. All limbs and foliage of living trees would be removed up to a height of eight feet and
- From eight feet to the horizontal plane of highest point of the conductor attachment: remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

#### **Hazardous Materials Release Response Plans and Inventory Act of 1985**

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses that use hazardous materials to prepare a hazardous materials business plan (HMBP) that describes their facilities, inventories, emergency response plans, and

1 training programs. Hazardous materials are defined as unsafe raw or unused materials that are  
2 part of a process or manufacturing step. They are not considered hazardous waste; however,  
3 health concerns pertaining to the release of hazardous materials are similar to those for hazardous  
4 waste. An HMBP must be submitted to the local CUPA (the Kern County Public Health Services  
5 Department/Environmental Health Division) if the facility handles, uses or stores a hazardous  
6 material or mixture containing a hazardous material that has a quantity equal to or greater than 55  
7 gallons of liquid, 500 pounds of a solid substance, or 200 cubic feet of compressed gas, a  
8 hazardous compressed gas in any amount, or hazardous waste in any amount. A HMBP must  
9 include the following:

- 10 • Inventory of hazardous materials at a facility;
- 11 • Emergency response plans and procedures in the event of a reportable release or threatened  
12 release of a hazardous material; and
- 13 • Training for all new employees and annual training for all employees in safety procedures in  
14 the event of a release or threatened release of a hazardous material (Cal OES, 2011).

#### 15 **Hazardous Waste Control Act**

16 The Hazardous Waste Control Act created the State Hazardous Waste Management Program,  
17 which is similar to but more stringent than the Federal RCRA program. The act is implemented  
18 by regulations contained in Title 26 of the CCR, which describes the following aspects for the  
19 requirements for the proper management of hazardous waste:

- 20 • Identification and classification;
- 21 • Generation and transportation;
- 22 • Design and permitting of recycling, treatment, storage, and disposal facilities;
- 23 • Treatment standards;
- 24 • Operation of facilities and staff training; and
- 25 • Closure of facilities and liability requirements.

26 These regulations list more than 800 materials that may be hazardous and establish criteria for  
27 identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and  
28 Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste  
29 from generator to transporter to the ultimate disposal location. Copies of the manifest must be  
30 filed with the California DTSC.

#### 31 **California Occupational Safety and Health Administration**

32 The California Occupational Safety and Health Administration (Cal/OSHA) is the primary  
33 agency responsible for worker safety in the handling and use of chemicals in the workplace.  
34 Cal/OSHA standards are generally more stringent than federal regulations. The employer is  
35 required to monitor worker exposure to listed hazardous substances and to notify workers of

1 exposure (8 CCR 330 et seq.). The regulations specify requirements for employee training,  
2 availability of safety equipment, accident prevention programs, and hazardous substance  
3 exposure warnings.

#### 4 **Department of Toxic Substances Control**

5 The DTSC is responsible for the enforcement of the Hazardous Waste Control Act (California  
6 Health and Safety Code, Section 25100 et seq.), which creates the framework under which  
7 hazardous wastes are managed in California. The law provides for the development of a state  
8 hazardous waste program that administers and implements the provisions of the federal RCRA  
9 cradle-to-grave waste management system in California. It also provides for the designation of  
10 California-only hazardous waste and development of standards that are equal to or, in some cases,  
11 more stringent than federal requirements. While the Hazardous Waste Control Act is generally  
12 more stringent than RCRA, until the USEPA approves the California hazardous waste control  
13 program (which regulates the generation, treatment, storage, and disposal of hazardous waste),  
14 both the state and federal laws apply in California. The Hazardous Waste Control Act lists 791  
15 chemicals and approximately 300 common materials that may be hazardous; establishes criteria  
16 for identifying, packaging, and labeling hazardous wastes; prescribes management controls;  
17 establishes permit requirements for treatment, storage, disposal, and transportation; and identifies  
18 some wastes that cannot be disposed of in landfills.

19 According to Title 22, Section 66001 et seq., of the CCR, substances having a characteristic of  
20 toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes  
21 are hazardous substances that no longer have a practical use, such as material that has been  
22 abandoned, discarded, spilled, or contaminated, or is being stored prior to proper disposal.

23 Similar to the USEPA Risk Management Program, the California Accidental Release Prevention  
24 (CalARP) Program (19 CCR 2735.1 et seq.) regulates facilities that use or store regulated  
25 substances, such as toxic or flammable chemicals, in quantities that exceed established  
26 thresholds. The overall purpose of CalARP is to prevent accidental releases of regulated  
27 substances and to reduce the severity of releases that may occur. The CalARP Program meets the  
28 requirements of the USEPA Risk Management Program, which was established pursuant to the  
29 Clean Air Act amendments.

30 In California, the handling and storage of hazardous materials is regulated by Division 20,  
31 Chapter 6.95, of the California Health and Safety Code (Section 25500 et seq.). Under Sections  
32 25500–25543.3, facilities handling hazardous materials are required to prepare a hazardous  
33 materials business plan. Hazardous materials business plans contain basic information about the  
34 location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the  
35 state.

36 Chapter 6.95 of the California Health and Safety Code establishes minimum statewide standards  
37 for hazardous materials business plans. Each business shall prepare a hazardous materials  
38 business plan if that business uses, handles, or stores a hazardous material (including hazardous  
39 waste) or an extremely hazardous material in quantities greater than or equal to the following:

- 40 • 500 pounds of a solid substance

- 1       • 55 gallons of a liquid
- 2       • 200 cubic feet of compressed gas
- 3       • A hazardous compressed gas in any amount (highly toxic with a threshold limit value of
- 4       10 parts per million or less)
- 5       • Extremely hazardous substances in threshold planning quantities (California Health and
- 6       Safety Code, Section 25503.5).

7       In addition, in the event that a facility stores quantities of specific acutely hazardous materials  
8       above the thresholds set forth by the California Health and Safety Code, facilities are also  
9       required to prepare a USEPA Risk Management Program plan and CalARP Program plan. The  
10       USEPA Risk Management Program plan and CalARP Program plan provide information about  
11       the potential impact zone of a worst-case release and require plans and programs designed to  
12       minimize the probability of a release and mitigate potential impacts.

13       The California Fire Code (CFC) is Chapter 9 of Title 24 of the CCR and was created by the  
14       California Building Standards Commission, based on the International Fire Code created by the  
15       International Code Council. It is the primary means for authorizing and enforcing procedures and  
16       mechanisms to ensure the safe handling and storage of any substance that may pose a threat to  
17       public health and safety. The CFC regulates the use, handling, and storage requirements for  
18       hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard  
19       classification system to determine what protective measures are required to protect fire and life  
20       safety. These measures may include construction standards, separations from property lines, and  
21       specialized equipment. To ensure that these safety measures are met, the CFC employs a permit  
22       system based on hazard classification. The CFC is updated every 3 years.

23       Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State  
24       of California developed an emergency response plan to coordinate emergency services provided  
25       by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or  
26       hazardous waste is an integral part of the plan, which is administered by the Governor's Office of  
27       Emergency Services. The Governor's Office of Emergency Services coordinates the responses of  
28       other agencies, including the California Environmental Protection Agency (CalEPA), California  
29       Highway Patrol, Regional Water Quality Control Boards, air quality management districts, and  
30       county disaster response offices. California Public Utilities Commission (CPUC) GO 95 is the  
31       key standard governing the design, construction, operation, and maintenance of overhead electric  
32       lines within the state of California. GO 95 provides fire safety standards for overhead electric  
33       lines, including minimum distances for conductor spacing, minimum conductor ground clearance,  
34       and standards for calculating maximum sag, electric line inspection requirements, and vegetation  
35       clearance requirements.

### 36       **California Highway Patrol**

37       A valid Hazardous Materials Transportation License issued by the California Highway Patrol  
38       (CHP) is required by the laws and regulations of State of California Vehicle Code Section 3200.5  
39       for transportation of either:

- 1 • Hazardous materials shipments for which the display of placards is required by state  
2 regulations; or
- 3 • Hazardous materials shipments of more than 500 pounds, which would require placards if  
4 shipping greater amounts in the same manner.

5 Additional requirements on the transportation of explosives, inhalation hazards, and radioactive  
6 materials are enforced by the CHP under the authority of the California Vehicle Code. It is illegal  
7 to transport explosives or inhalation hazards on any public highway that is not designated for that  
8 purpose, unless the use of a highway is required to permit delivery or the loading of such  
9 materials. The transport of explosives generally requires consistency with additional rules and  
10 regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–  
11 1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5]  
12 [1157–1157.8]). The transport of radioactive materials is restricted to specific safe routes.  
13 According to Section 2.5.4 of the Kern County General Plan Circulation Element, State Route  
14 (SR) 14 and SR 58 are designated as adopted commercial hazardous materials shipping routes.

### 15 **Local**

#### 16 **Kern County General Plan**

17 The Kern County General Plan provides goals and policies for the design features of development  
18 projects in order to reduce impacts of such projects. The policies and implementation measures in  
19 the Kern County General Plan for hazards and hazardous materials that are applicable to the  
20 project are provided below. The Kern County General Plan contains additional policies, goals,  
21 and implementation measures that are more general in nature and are not specific to development  
22 such as the proposed project. Therefore, they are not listed below, but all policies, goals, and  
23 implementation measures in the Kern County General Plan are incorporated by reference.

24 The Circulation and Safety Elements of the Kern County General Plan establish the goals,  
25 policies, and implementation measures related to hazardous materials and safety that are  
26 applicable to the project. The General Plan Circulation Element requires the identification of  
27 appropriate hazardous materials shipping routes, and reduction in use of County-maintained roads  
28 and city-maintained streets for transportation of hazardous materials. The General Plan Safety  
29 Element requires that the Kern County Multi-Hazard Mitigation Plan be used as a source  
30 document for the formulation of potential mitigation (AMEC, 2012).

#### 31 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation** 32 **Element**

##### 33 1.3 Physical and Environmental Constraints

##### 34 Goal

35 Goal 1: To strive to prevent loss of life, reduce personal injuries and property damage, and  
36 minimize economic and social diseconomies resulting from natural disaster by  
37 directing development to areas that are not hazardous.

1 Policy

2 Policy 1: Kern County will ensure that new developments will not be sited on land that is  
3 physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map  
4 Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood  
5 Hazard], Map Codes 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map  
6 Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate  
7 studies establish that such development will not result in an unmitigated significant  
8 impact.

9 **Kern County General Plan Chapter 2: Circulation Element**

10 2.5.4 Transportation of Hazardous Materials

11 Transportation-related accidents and spills of hazardous materials pose a serious threat to the  
12 traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a  
13 short-term threat to public health.

14 Goal

15 Goal 1: Reduce risk to public health from transportation of hazardous materials.

16 Policies

17 Policy 1: The commercial transportation of hazardous material, identification, and designation  
18 of appropriate shipping routes will be in conformance with the adopted Kern County  
19 and Incorporated Cities Hazardous Waste Management Plan.

20 Policy 2: Kern County and affected cities should reduce use of County-maintained roads and  
21 city maintained streets for transportation of hazardous materials.

22 Implementation Measure

23 Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined  
24 for disposal will be designated as such pursuant to California Vehicle Code Sections  
25 31303 et seq. Permit applications shall identify commercial shipping routes they  
26 propose to utilize for particular waste streams.

27 **Kern County General Plan Chapter 4: Safety Element**

28 4.9 Hazardous Materials

29 Policy

30 Policy 2: Innovative technologies to manage hazardous waste streams generated in Kern County  
31 will be encouraged.

32 Implementation Measures

33 Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply  
34 with the Uniform Fire Code, with requirements for siting or design to prevent onsite  
35 hazards from affecting surrounding communities in the event of inundation.

1 **Kern**

2 The Kern County Wildland Fire Management Plan documents the assessment of wildland fire  
3 situations throughout the State Responsibility Areas within the County. The Kern County Fire  
4 Department Wildland Fire Management Plan provides for systematically assessing the existing  
5 levels of wildland protection services and identifying high-risk and high-value areas that are  
6 potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and  
7 losses from wildfire by protecting assets at risk through focused pre-fire management  
8 prescriptions and increasing initial attack success. Based on this assessment, preventive measures  
9 are implemented, including the creation of wildfire protection zones.

10 **Kern County Public Health Services Department/Environmental Health Services**  
11 **Division**

12 The County of Kern Environmental Health Services Division is the CUPA for the project area,  
13 which provides site inspections of hazardous materials programs (aboveground storage tanks,  
14 underground storage tanks, hazardous waste treatment, hazardous waste generators, hazardous  
15 materials management and response plans, and the CFC). This department also provides  
16 emergency response to hazardous materials events, performing health and environmental risk  
17 assessment, and substance identification.

18 The Hazardous Waste Plan provides policy direction and action programs to address current and  
19 future hazardous waste management issues that require local responsibility and involvement in  
20 Kern County.

21 In addition to the General Plan, the Safety and Seismic Element of the Mojave Specific Plan  
22 includes objectives and policies related to hazardous materials and safety that are applicable to  
23 the project, including protection of the community from human-caused hazards, the proper  
24 handling of hazardous materials, and that information on hazardous materials handling is  
25 available to fire protection and other safety agencies in accordance with the Uniform Fire Code.

26 The South of Mojave-Elephant Butte Specific Plan includes an implementation measure related to  
27 hazardous materials and safety that prohibits the issuance of building permits within areas subject  
28 to inundation.

29 The West Edwards Road Settlement Specific Plan includes goals, policies and implementation  
30 measures that require that development occur outside of areas identified as primary floodways,  
31 the incorporation of measures to ensure that developments will not be hazardous, and that  
32 developments that would be hazardous to public health and safety be prohibited. This specific  
33 plan also requires that site development comply with the Kern County Flood Damage Prevention  
34 Ordinance and Kern County Zoning Ordinance, and that projects within 300 feet of an identified  
35 seismic hazard area comply with the provisions of the Geological Hazard Combining District  
36 pursuant to the Kern County Zoning Ordinance.

37 The Willow Springs Specific Plan includes implementation measures related to hazardous  
38 materials and safety, including ensuring the proper design and placement of onsite waste disposal  
39 systems and detention basins or facilities.

1 To ensure consistency in the administrative requirements, permits, inspections, and enforcement  
2 related to the handling and storage of hazardous wastes and materials, CalEPA oversees the  
3 Unified Program and certifies local government agencies as CUPA to implement hazardous waste  
4 and materials standards. The Kern County Environmental Health Services Department (EHSD) is  
5 the CUPA for the project area. As the CUPA, the EHSD is responsible for programs, permitting,  
6 and fees related to hazardous material disclosure, business emergency plans, hazardous waste,  
7 underground storage tanks, aboveground petroleum storage tanks, and the CalARP Program.

### 8 **3.9.1.3 Environmental Setting**

9 This EIS/EIR section describes the existing physical environmental conditions in the vicinity of  
10 the project as they relate to the potential hazardous materials and waste impacts of the proposed  
11 project.

#### 12 ***Regional Setting***

13 In Kern County, much of the hazardous waste is generated by the oil industry. Kern County also  
14 has many small-quantity generators of hazardous wastes; these include dry cleaners, hospitals and  
15 laboratories, automotive maintenance, agriculture, metal plating, and schools. Cleanup of  
16 contaminated sites such as leaking gasoline tanks, agricultural product formulators, or asbestos  
17 produces a significant portion of hazardous wastes in Kern County. Closed hazardous waste  
18 management facilities may contain large volumes of contaminated soil (Kern County, 2009).

#### 19 ***Local Setting***

20 The project site is located on an undeveloped alluvial plain associated with the southeastern slope  
21 of the Tehachapi Mountains. The project site is relatively flat, with elevations ranging from  
22 approximately 2,550 feet above mean sea level (amsl) in the northwest sloping gradually to  
23 approximately 2,450 feet amsl to the east (Petra Geotechnical, 2012). Ridges, rocky outcrops, and  
24 other substantial topographic features are generally absent from the project site.

25 The general population includes sensitive subgroups that could be at a greater risk from exposure  
26 to emitted pollutants. These sensitive subgroups include the very young, the elderly, and those  
27 with existing illnesses. Individuals who have the potential to be exposed to a release of project-  
28 related hazardous materials are those who live within the nearest communities to the project site.

29 The nearest communities to the project site are Mojave and Rosamond, in addition to the on-base  
30 communities located throughout Edwards AFB. The populations of Mojave and Rosamond are  
31 approximately 4,200 and 18,000 people, respectively, according to the 2010 Census (U.S. Census  
32 Bureau, 2010). The on-base communities at Edwards AFB include the daily workforce of  
33 approximately 10,800 people and the military families that occupy 786 family housing units  
34 located 8 miles southeast of the project site, near the intersection of Lancaster Boulevard and  
35 Rosamond Boulevard. The residents within these nearby communities are at the greatest risk from  
36 exposure to emitted pollutants because of their close proximity to the project site.

37 Some of the proposed gen-tie route option segments, specifically to the north and east, are near  
38 the unincorporated town of Mojave. Surrounding land in Mojave includes commercial, industrial,  
39 and low-density residential uses. The nearest sensitive receptors to the project site are residential  
40 properties across Trotter Avenue, approximately 200 feet north of the site.

## 1 Existing Environmental Contamination

2 A Preliminary Hazardous Materials Memorandum was prepared for the project, based on an  
3 Environmental Risk Information Services (ERIS) report. ERIS searched records from federal,  
4 state, local, and tribal entities as specified in the American Society for Testing and Materials  
5 (ASTM) Standard E1527-13, Section 8.1.8, Sources of Standard Source Information. In order to  
6 capture potential impacts to the project area from adjacent sites, a one-eighth-mile buffer was  
7 added around the project area boundary, and a 100-foot buffer was added around the gen-tie.  
8 Additional information for sites identified in the ERIS report was gathered from the DTSC  
9 EnviroStor database ([www.envirostor.dtsc.ca.gov](http://www.envirostor.dtsc.ca.gov)) and Regional Water Quality Control Board's  
10 GeoTracker database ([geotracker.waterboards.ca.gov](http://geotracker.waterboards.ca.gov)). The project includes electrical power lines  
11 that pass near or through the following hazardous waste sites, which are subject to land-use  
12 restriction by the DTSC (Dudek, 2018). **Figure 3.9-1** shows the locations of the following sites:

13 The Purdy Company, located 3.06 miles northwest of the solar facility and adjacent to the gen-tie  
14 route at 12902 United Road, has been reported in the site mitigation and brownfields reuse  
15 program (through the DTSC). A deed restriction is reported to have been placed at the site on  
16 August 21, 1996. The site is reported to have been cleaned up for commercial/industrial use only.  
17 Other uses are allowed only with DTSC written approval.

18 The United Metal Recovery, located 2.60 miles northwest of the solar facility and adjacent to the  
19 gen-tie route at 12433 United Street, has been reported to have contaminated soils at the  
20 consolidation pit that was covered with a reinforced concrete cap. Under the DTSC, the site is  
21 certified for operation and maintenance. All planned activities are reported to be implemented and  
22 remediation continues.

23 The Silver Queen Junkyard/Commodity Refining Exchange, located 2.07 miles north of the solar  
24 facility and adjacent to the gen-tie route at 11847 United Street, was reported as containing  
25 hazardous concentrations of lead, copper, zinc, and dioxin in the ash piles and site soils. Removal  
26 actions were conducted and completed in June 1999. The removal action involved construction of  
27 a concrete cap over areas affected with hazardous concentrations of heavy metals, lead (Pb),  
28 copper (Cu), zinc (Zn), cadmium (Cd), and dioxin. This site has reported a deed restriction and  
29 was certified by DTSC for operation and maintenance on June 29, 2006.

30 The Primary Gold Company, located 2.54 miles northeast of the solar facility and adjacent to the  
31 gen-tie route, was reported to have abandoned waste (with possible corrosives) and dumped it  
32 into a sump. Lack of vegetation was observed and open and unlabeled drums were noted. Site  
33 screening took place and a preliminary endangerment assessment (with the DTSC) was  
34 recommended to determine the nature of the release.

35 Commodity Resource & Environmental (also listed as Commodity Refining Exchange), located  
36 adjacent to North-South Gen-tie Option 2, was reported to have waste dioxin ash deposited  
37 throughout the site. In 1990 a polymer coating was applied on the property and areas of  
38 contamination were capped in 2003. This site has reported a deed restriction and was certified by  
39 DTSC for operation and maintenance on February 4, 1997.

40 Mobile Smelting, located adjacent to North-South Gen-tie Option 2, was reported as having soils  
41 are impacted with dioxin, lead, zinc, cadmium, and copper by direct and windborne deposition. A

1 large area in the southeast portion of the site is impacted. In 2014, approximately 20,000 cubic  
2 yards of contaminated soils were excavated and consolidated; a cap was installed over the  
3 contaminated soil. As contaminants are still present, the land has been restricted to industrial or  
4 commercial use only.

5 Courtaulds Aerospace, located adjacent to North-South Gen-tie Option 2, was reported as having  
6 soils are impacted with dioxin, lead, zinc, cadmium, and copper by direct and windborne  
7 deposition from operations at the Mobile Smelting site. DTSC and the responsible parties  
8 currently have a voluntary cleanup agreement to conduct a cleanup of the soil contamination. A  
9 removal action workplan was submitted to DTSC but was retracted due to uncertainties regarding  
10 the appropriate cleanup goal for dioxin contaminants. Final decision making for the Courtaulds  
11 site is dependent establishment of dioxin cleanup goals at the adjacent Mobile Smelting site  
12 (DTSC, 2018). Further, deed-restrictions have not been implemented as of the date of this report.  
13 However, based on DTSC correspondence regarding the site, deed restrictions may apply once  
14 remediation is completed.

15 Western Growth Properties, located at 14501 Holt Street and adjacent to North-South Gen-tie  
16 Option 2, was reported to have a leaking underground storage tank in 1999. The contaminant of  
17 concern is diesel and the media affected (i.e. soil and/or groundwater) was not specified. The  
18 project site maintains a completed – case closed status as of January 4, 2000. No land-use  
19 restrictions are reported for this site.

20 Additionally, Edwards AFB is a Superfund site and was reported in several regulatory databases.  
21 Groundwater and soils have been contaminated with various solvent and fuel volatile organic  
22 compounds, benzene, toluene, ethyl benzene and xylene, perchlorate, 1,4-dioxane,  
23 N-Nitrosodimethylamine, and various metals. In addition to these contaminants, landfills may  
24 contain unexploded ordnance or other munitions-related materials. An extensive groundwater-  
25 monitoring program is already under way. Many of the 471 potential contamination sites are  
26 listed as needing no further investigation or no further action because of insignificant residual  
27 contamination. Based on the USEPA Briefing Map, dated June 2008, the contamination plumes  
28 appear to be generally down-gradient and outside of the immediate vicinity of the proposed  
29 project site. Existing groundwater contaminant plumes have been mapped and are shown in  
30 **Figure 3.9-2.**

31 There is one on-base CERCLA designated site within the project area identified in the Edwards  
32 AFB Environmental Restoration Program as Site 416 (see Figure 3.9-2). Site 416 (State Well No.  
33 10/12-22Q1) is located on the project site and was an abandoned water well, likely used for  
34 agricultural and domestic uses until the 1950s. Initial sampling at Site 416 showed elevated levels  
35 of arsenic in the soil and groundwater. Arsenic was detected in the groundwater at concentrations  
36 exceeding the Maximum Contaminant Level (MCL); however, the detections were consistent  
37 with regional data. This site was closed by the lead regulatory agency, and no further  
38 investigation was recommended (USAF, 2003).

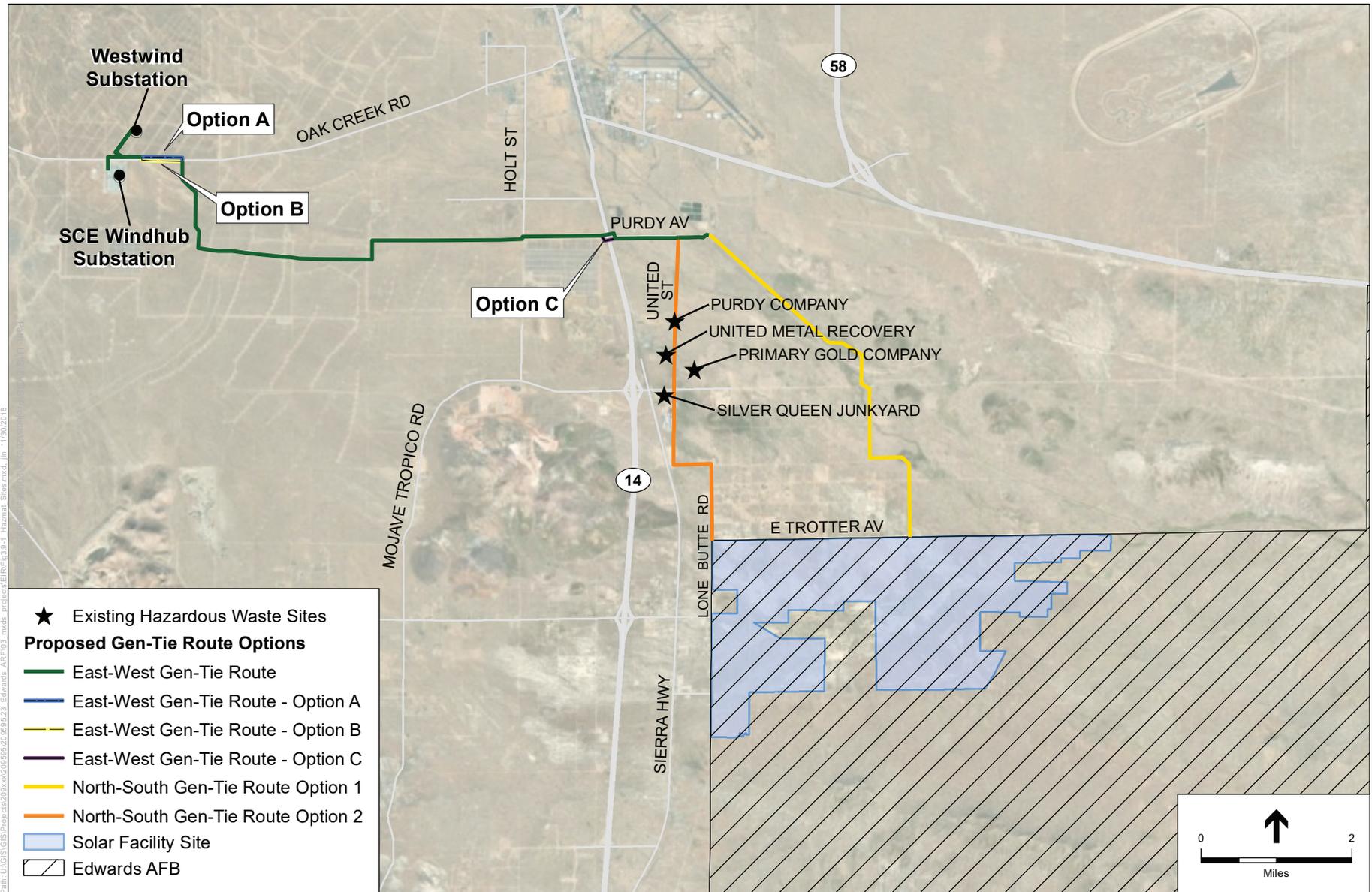


Figure 3.9-1: EXISTING HAZARDOUS WASTE SITES IN THE VICINITY OF THE PROPOSED GEN-TIE LINE

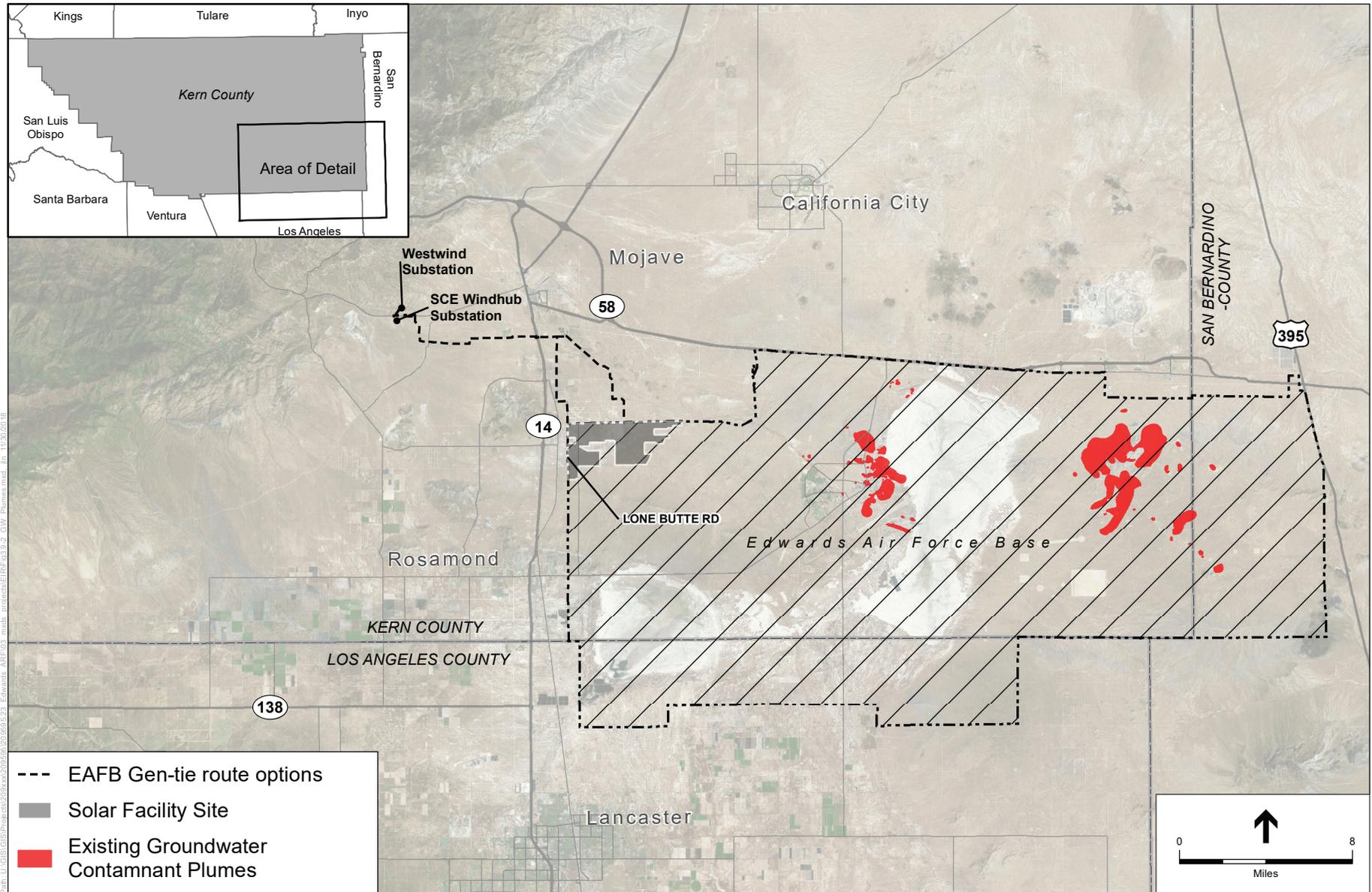


Figure 3.9-2: EXISTING GROUNDWATER CONTAMINANT PLUMES WITHIN EDWARDS AFB

1 **Hazardous Materials Transportation**

2 According to Section 2.5.4 and Figure 11 of the Kern County General Plan Circulation Element,  
3 I-5 and SR 14 are designated as adopted commercial hazardous materials routes. Thus, these  
4 roadways are equipped to handle the transport of hazardous materials and would provide regional  
5 access to the site.

6 Potential Hazards from Photovoltaic Solar Modules Although the specific type of solar  
7 photovoltaic (PV) solar modules has not been selected for the project, it is conceivable that the  
8 modules may utilize mono- or poly crystalline silicon c-Si or Cadmium Telluride (CdTe)  
9 technology. PV modules may contain small amounts of regulated materials (e.g., Cd, Pb, Se, Cu,  
10 Ni, and Ag), which vary from one technology to another.

11 Microcrystalline panels removed from the site would be recycled or otherwise disposed of at an  
12 appropriate waste disposal facility. Silicon based modules can be recycled with aluminum frames  
13 and junction boxes dismantled manually at the beginning of the process. If not properly  
14 decommissioned, the greatest end-of-life health risk from crystalline solar modules arises from  
15 lead-containing solders. Under certain conditions, it is possible for the lead to leach into landfill  
16 soils and eventually into water bodies. However, modern solar modules are made with tin or other  
17 non-lead solder, and would not pose the health risk that older solar modules have in the past.

18 In PV modules using “thin-film” CdTe technology, the cadmium is in the environmentally stable  
19 form of a compound rather than the leachable form of a metal. The CdTe compound is  
20 encapsulated in the PV module, with the PV module containing less than 0.1 percent cadmium by  
21 weight. Several peer-reviewed studies have evaluated the environmental, health, and safety  
22 aspects of CdTe PV panels (provided in Appendix B1 of this EIS/EIR). These studies have  
23 consistently concluded that during normal operations, CdTe PV panels do not present an  
24 environmental risk. Specifically, it has been demonstrated that there are no cadmium emissions to  
25 air, water, or soil during standard operation of CdTe PV systems. CdTe releases are unlikely to  
26 occur during accidental breakage. Furthermore, studies have been conducted to evaluate the  
27 panels when the stability of the encapsulation is jeopardized, such as when a broken panel is  
28 exposed to fire. These studies indicate that even these events would result in negligible cadmium  
29 emissions. A recent research article evaluates the worst-case scenario to estimate potential  
30 exposures to cadmium compounds in soil, air, or groundwater. The results show that exposure-  
31 point concentrations in soil, air, and groundwater are one to six orders of magnitude below human  
32 health screening levels, indicating that it is highly unlikely that exposures to these media would  
33 pose potential health risks to onsite workers or offsite residents. Appendix B1 presents additional  
34 information regarding CdTe.

35 **3.9.2 Environmental Consequences**

36 This section describes the environmental consequences relating to hazardous materials and safety  
37 for the project. It describes the methods used to determine the effects of the proposed project and  
38 lists the thresholds used to conclude whether an effect would be significant.

### 3.9.2.1 Assessment Methods/Methodology

The analysis of potential impacts of the Proposed Action and alternatives regarding hazardous materials and waste focuses on possible impacts to the health and safety of the public and the environment. Impacts are identified and evaluated based on relevant lead agency standards, policies, and guidelines. Information regarding hazardous material use and waste practices were reviewed for this analysis and include the following:

1. Hazards Assessment Memorandum for the Edwards AFB Solar Project (Dudek, 2018) (see Appendix B10).
2. Air Force Hazardous Materials Policies and Procedures (AF132-7086).
3. Edwards AFB Waste Management Plan.

The analysis presents the evaluation of the potential for the transportation, storage, and use of hazardous materials during construction and operation of the project to affect the surrounding community and the environment. It is recognized that some hazardous materials must be used for project construction and operation. To assess the potential for a release of hazardous materials to affect the public or the environment, this analysis examines the types and quantities of hazardous materials to be used; the manner in which the developer would handle, store, and dispose of hazardous materials and hazardous wastes; and the transportation of hazardous materials to and from the project site.

This analysis was conducted by examining the type and amount of hazardous materials to be used and, the manner in which the developer would use, transport, and store hazardous materials.

### 3.9.2.2 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was considered significant related to hazardous materials and safety if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice. The project would cause a significant environmental impact related to hazardous materials and safety if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment; or

- 1 • Expose people or structures to a significant risk of loss, injury, or death involving  
2 wildland fires, including where wildlands are adjacent to urbanized areas or where  
3 residences are intermixed with wildlands.

4 The County determined in the NOP that the following environmental issue area would result in  
5 no impact or a less-than-significant impact and it was therefore scoped out of requiring further  
6 review in this EIS/EIR:

- 7 • Emit hazardous emissions or involve handling hazardous or acutely hazardous materials,  
8 substances, or waste within one-quarter mile of an existing or proposed school.

9 Please refer to Appendix A1 of this EIS/EIR for a copy of the NOP and additional information  
10 regarding this issue.

### 11 3.9.3 Analysis of Environmental Effects

#### 12 3.9.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### 13 *NEPA: Environmental Impacts*

##### 14 **Construction**

15 Alternative A would not involve the routine transport, use, or disposal of hazardous materials, as  
16 defined by the Hazardous Materials Transportation Uniform Safety Act. However hazardous  
17 material may be used during construction. This may include cleaning fluids, fuels (gasoline,  
18 diesel fuel, etc.), lubricants, cleaning solvents, paints, and pesticides. Soiled rags and similar  
19 applicators and cleanup materials would also require disposal.

20 PV solar panels that would be installed on the project site would be made from either crystalline  
21 silicon or CdTe. Crystalline silicon PV panels may include small amounts of solid materials that  
22 are considered to be hazardous. Because such materials are in a solid and nonleachable state,  
23 potential broken crystalline silicon PV panels would not be a source of pollution to surface water,  
24 stormwater, or groundwater. In PV modules using CdTe technology, the cadmium is in the  
25 environmentally stable form of a compound rather than the leachable form of a metal. CdTe  
26 releases are unlikely to occur during accidental breakage. Furthermore, studies of the panels  
27 where the stability of the encapsulation has been jeopardized, such as if a broken panel were  
28 exposed to fire, have indicated that such events still result in negligible cadmium.

29 The use, storage, and disposal of hazardous materials and waste associated with Alternative A  
30 could result in potential adverse health and environmental effects associated with improper  
31 management of these materials. In general, the greatest potential effects are associated with the  
32 release of these materials into the environment, which could occur from improper storage,  
33 disposal, or use hazardous materials. Direct effects of such releases could include contamination  
34 of vegetation, soil, and water, which could result in indirect effects to human and wildlife  
35 populations. However, all hazardous materials would be handled and stored in compliance with  
36 the requirements set forth in the applicable codes and regulations. In addition, the developer and  
37 its contractor would store all paints, solvents, and any other hazardous materials in the manner  
38 specified by the manufacturer and in accordance with federal, state, and local regulations.

1 Construction of Alternative A could also result in a potential hazard to the public or personnel if a  
2 hazardous material spill or leak were to occur. In accordance with the California Health and  
3 Safety Code and Mitigation Measure MM 3.9-1a for the solar facility portion of the project site,  
4 as well as Mitigation Measure MM 3.9-1b for the gen-tie portion of the site, the developer would  
5 prepare a HMBP that would delineate storage areas for hazardous material and hazardous waste;  
6 describe proper handling, storage, and disposal techniques; describe methods to be used to avoid  
7 spills and minimize impacts of a spill; describe procedures for handling and disposing of  
8 unanticipated hazardous materials encountered during construction; and establish public and  
9 agency notification procedures for spills and other emergencies.

10 Grading, drilling, or excavation at the site has the potential to mobilize hazardous materials  
11 currently in the soil. This could result in exposure of personnel and other sensitive receptors to  
12 contaminant levels that could result in short-term and/or long-term health effects. Implementation  
13 of Mitigation Measures MM 3.9-1a and MM 3.9-1b (Hazardous Materials Business Plan) and  
14 MM 3.9-2a for the solar facility portion of the project site, as well as Mitigation Measure MM  
15 3.9-3b for the gen-tie portion of the site (Hazardous Materials Contingency Plan) would further  
16 reduce impacts by requiring the construction contractor to stop work if suspected contamination  
17 is identified, cordon off areas of suspected contamination, take appropriate health and safety  
18 measures, have a trained individual conduct sampling and testing of suspected material, and, if  
19 contamination is found to be greater than regulatory limits, document all actions and notify the  
20 Kern County Health and Fire Department along with the Edwards AFB Environmental  
21 Management. Contamination from hazardous materials at the site would be reduced with the  
22 implementation of recommended mitigation measures, but effects would not be completely  
23 avoided.

24 Further, removal and/or maintenance of vegetation may require pesticide and herbicide use  
25 during both construction and operation. If not handled properly, use of these products could  
26 create a hazard to the public (construction workers, maintenance employees, and nearby  
27 residences), resulting in a potentially significant impact. Implementation of Mitigation Measure  
28 MM 3.5-5a for the solar facility portion of the project (Weed Control) would reduce impacts  
29 related to use of pesticides and herbicides see Section 3.5, *Biological Resources*). Mitigation  
30 Measure MM 3.9-3a for the solar facility portion of the site and Mitigation Measure 3.9-4b for  
31 the gen-tie portion of the site, would require the developer to submit evidence that the contractor  
32 or personnel applying herbicides have all the appropriate state and local herbicide applicator  
33 licenses and comply with all state and local regulations regarding herbicide use, including any  
34 terms and conditions of the Pesticide Use Permit issued by the Air Force. Therefore, adverse  
35 health effects to the public, construction personnel, wildlife, or sensitive vegetation would be  
36 reduced or avoided.

37 Edwards AFB is on the National Priorities List of Uncontrolled Hazardous Waste Sites under  
38 CERCLA as a property of environmental concern. The Air Force will perform final cleanup  
39 actions for a variety of sites in the operable unit areas after they select final remedies in the  
40 Records of Decision (RODs). Currently, 6 RODs have been signed and 11 more are anticipated  
41 by USEPA through 2019. Based on the USEPA Briefing Map, dated June 2008, the  
42 contamination plumes appear to be generally down-gradient and outside of the immediate vicinity

1 of the Proposed Action site. Therefore, it is unlikely that construction and operation activities  
2 associated with the project would encounter contaminated materials on the base.

3 As discussed under the “Existing Environmental Contamination” section above and shown in  
4 Figure 3.9-1, environmental database searches indicated that some segments of the proposed  
5 project gen-tie route options would pass near or through sites with land-use restrictions.  
6 Disturbance of contaminated soils or remedial equipment at the sites would require DTSC  
7 approval. The exact route of the gen-tie line has not yet been determined, so it is currently  
8 unknown if construction of the line would require ground disturbance of any of these sites. If the  
9 gen-tie line were to cross one of these sites, as required by Mitigation Measure MM 3.9-7b for the  
10 gen-tie portion of the site (Environmental Contamination Avoidance) the developer would  
11 contact the DTSC prior to conducting any construction activities to avoid the disturbance of  
12 contaminated soils.

13 Construction equipment and activities have the potential to generate sparks that could ignite a  
14 wildfire. Also, as many as 450 construction workers could be onsite during peak project  
15 construction and may be exposed to a wildfire if one were to occur. According to the California  
16 Department of Forestry and Fire Protection (CAL FIRE) Fire Hazards Severity Zone Maps for  
17 State and Local Responsible Areas in Kern County, the proposed solar facility and gen-tie line  
18 option would be constructed in zones having Moderate Fire Hazard Severity (CAL FIRE, 2007).  
19 Moderate zones are typically wildland supporting areas of low fire frequency and relatively  
20 modest fire behavior. All project components would be constructed outside of any areas identified  
21 as High or Very High Fire Severity Zones. The proposed project is required to comply with all  
22 applicable wildland fire management plans and policies established by CAL FIRE, the Kern  
23 County Fire Department, and CPUC GO 95: Overhead Electric Line Construction. Accordingly,  
24 the proposed project is not expected to expose people or structures to a significantly increased  
25 risk of loss, injury, or death involving wildland fires.

26 **Operation and Maintenance**

27 Operation of Alternative A would require limited quantities of hazardous materials to be used and  
28 stored. These materials would include oils, lubricants, paints, solvents, degreasers and other  
29 cleaners, and transformer mineral oil. Transformer mineral oil would be stored at the onsite  
30 substations; all other hazardous materials would be stored in warehouses. Mineral oil may be  
31 stored at the solar facility. The generator step-up transformers at the onsite substations may  
32 contain dielectric fluid (mineral oil) on a concrete pad surrounded by earthen, fiberglass, or  
33 concrete containment berm/curb. The containment area would be lined with an impermeable  
34 membrane covered with gravel, and would drain to an underground storage tank. The onsite  
35 substations would have a comprehensive SPCC plan in accordance with state and federal  
36 regulations. Any stormwater or fluid drained to the tank would be inspected for a sheen prior to  
37 disposal. If a sheen is observed, the tank contents would be removed by vacuum truck to an  
38 appropriate disposal site. If no sheen or contaminants are detected, the stormwater would be  
39 drained onsite.

40 Alternative A may use solar panels that contain crystalline silicon or CdTe. As stated, because  
41 crystalline silicon is in a solid and nonleachable state, crystalline silicon PV panels, including

1 broken panels, would not be a source of pollution to surface water, stormwater, or groundwater.  
2 Also, it has been demonstrated that standard operation of CdTe PV systems does not result in  
3 cadmium emissions to air, water, or soil. If solar panels containing CdTe are used at the project  
4 site, CdTe releases would be unlikely to occur as a result of accidental damage to the crystalline  
5 silicon PV panels. Similarly, fire damage would not result in the release of CdTe. Appendix B1  
6 presents additional information regarding CdTe.

7 Any hazardous materials used onsite would be stored in appropriate storage locations and  
8 containers. Flammable materials, such as paints and solvents, would be stored in nonflammable  
9 material storage cabinets with built-in containment sumps. Mitigation Measure MM 3.9-1a for the  
10 solar facility portion of the project site, as well as Mitigation Measure MM 3.9-1b for the gen-tie  
11 portion of the site (Hazardous Materials Business Plan) requires the developer to prepare an  
12 HMBP for project operation. Implementation of an HMBP would reduce potential impacts from  
13 the release of motor vehicle fuel or transformer oil, but impacts would not be completely avoided.

14 Herbicides and pesticides may also be used during project operation. Mitigation Measure MM  
15 3.9-3a for the solar facility portion of the site and Mitigation Measure 3.9-4b for the gen-tie  
16 portion of the site (Herbicide Control) would ensure that herbicides and pesticides are properly  
17 used in accordance to federal, state, and local regulations. In addition, the solar facility portion of  
18 the project is required to comply with the terms and conditions of the Pesticide Use Permit issued  
19 by the Air Force and the Base's Integrated Pest Management Plan, as detailed in Mitigation  
20 Measure MM 3.9-5a. Therefore, adverse health effects to the public, maintenance personnel,  
21 wildlife, or sensitive vegetation would be reduced or avoided.

22 Alternative A would result in the operation of electrical-power-generating facilities and  
23 transmission lines, which pose a potential wildfire ignition source. However, all project  
24 components are located outside of any High or Very High Fire Severity Zones as identified by  
25 Kern County and CAL FIRE (see discussion under the Construction subheading). In addition, the  
26 Proposed Action is required to comply with all applicable wildland fire management plans and  
27 policies established by CAL FIRE, the Kern County Fire Department and CPUC GO 95:  
28 Overhead Electric Line Construction. Accordingly, the Proposed Action is not expected to expose  
29 people or structures to a significantly increased risk of loss, injury, or death involving wildland  
30 fires during project operations.

### 31 **Decommissioning**

32 For decommissioning of the solar facility the solar modules would be dismantled and removed  
33 from the site by truck. The solar panels may contain hazardous materials such as crystalline  
34 silicon or CdTe. Crystalline silicon panels removed from the site would be recycled or otherwise  
35 disposed at an appropriate waste disposal facility. Disposal risks of cadmium would be minimized  
36 because of the encapsulation within the panel and because the cadmium can be effectively  
37 recycled at the end of the panel's 25- to 30-year life. Nearly 90 percent of each collected PV  
38 module would be recycled. Alternative A would include a Decommissioning Plan that would  
39 include a collection and recycling program. This recycling program would ensure recycling of  
40 project components, proper disposal of hazardous wastes, and minimal disposal of project wastes  
41 in landfills. Upon decommissioning, the solar site could be converted to other uses in accordance

1 with applicable land-use regulations in effect at that time. As discussed under “Construction” and  
2 “Operation and Maintenance,” implementation of Mitigation Measures MM 3.9-1a, MM 3.9-1b,  
3 MM 3.9-2a, MM 3.9-3b, MM 3.9-3a, and MM 3.9-4b would require hazardous material  
4 containment, reporting, and remediation requirements in the event of a spill or accidental release  
5 and would reduce potential impacts from use of hazardous materials at the site. After  
6 decommissioning activities, hazardous materials would not be present.

7 Decommissioning would result in demolition activities and the use of heavy machinery, which  
8 have the potential to generate sparks that could ignite a wildfire. However, all project components  
9 are located outside of any High or Very High Fire Severity Zones as identified by Kern County  
10 and CAL FIRE (see discussion under the Construction subheading above). In addition, the  
11 Proposed Action is required to comply with all applicable wildland fire management plans and  
12 policies established by CAL FIRE and the Kern County Fire Department. Accordingly, the  
13 Proposed Action is not expected to expose people or structures to a significantly increased risk of  
14 loss, injury, or death involving wildland fires during project decommissioning.

### 15 ***CEQA: Impact Significance Determination***

#### 16 **Impact 3.9-1: The project would create a significant hazard to the public or the** 17 **environment through the routine transport, use, or disposal of hazardous materials.**

18 As discussed in the NEPA analysis above, Alternative A construction, operation and  
19 maintenance, and decommissioning activities would require limited use of hazardous materials,  
20 but would not involve the routine transport, use, or disposal of hazardous materials, as defined by  
21 the Hazardous Materials Transportation Uniform Safety Act.

#### 22 **Construction**

23 Most of the hazardous waste generated by the project would occur during the construction period  
24 and would include concrete, cleaning fluids, and solvents. Some solid waste, such as welding  
25 materials and dried paint, may also be generated during construction. Hazardous wastes that are  
26 generated as a result of the construction of the project would be collected, transported, and  
27 disposed of by a licensed waste vendor consistent with applicable laws. Certain materials and  
28 products used in the construction of the project may be classified as hazardous materials. During  
29 construction of the project, per Mitigation Measure MM 3.9-1a for the solar facility portion of the  
30 site and Mitigation Measure MM 3.9-1b for the gen-tie portion of the site, material safety data  
31 sheets for all regulated substances present at the project site would be made readily available to  
32 onsite personnel. Per Mitigation Measure 3.9-2b, construction debris would be generated,  
33 recycled, and disposed of in local landfills. Recyclable materials, including wood, shipping  
34 materials, and metals, would be separated when possible for recycling. The disposal of all oils,  
35 lubricants, and spent filters would be performed in accordance with all applicable regulations.

#### 36 **Operation and Maintenance**

37 Project operation would require the use of transformer oil at the onsite project substation. All  
38 transformers would be equipped with spill containment. Per Mitigation Measure MM 3.9-2a for  
39 the solar facility portion of the project site, and Mitigation Measure MM 3.9-3b for the gen-tie  
40 portion of the site, all components would have a comprehensive SPCC plan, in accordance with

1 all applicable federal, state, and local regulations. Dust palliatives and herbicides, if used during  
2 operation to control vegetation, may be transported to the project site. These materials would be  
3 stored in appropriate containers to prevent accidental release. Operational activities are limited to  
4 monitoring solar plant performance, conducting scheduled maintenance for onsite electrical  
5 equipment, periodic panel washing (approximately every 3 to 4 months), and responding to utility  
6 needs for solar panel adjustment. No heavy equipment would be used during normal project  
7 operation. Operation and maintenance vehicles would include trucks (pickup and/or flatbed),  
8 forklifts, and loaders for routine and unscheduled maintenance, and water trucks for dust control  
9 and solar panel washing. Large heavy-haul transport equipment and cranes may be brought to the  
10 project site infrequently for equipment repair or replacement. Long-term maintenance and  
11 equipment replacement would be scheduled in accordance with manufacturer recommendations.  
12 Solar modules are expected to have a life of 25 or more years. Moving parts, such as motors and  
13 tracking module drive equipment, motorized circuit breakers and disconnects, and inverter  
14 ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would  
15 be conducted as necessary.

### 16 **Decommissioning**

17 As described previously under the NEPA analysis, although decommissioning of the solar facility  
18 could result in the use and transportation of hazardous materials, Alternative A would include a  
19 Decommissioning Plan that would include a collection and recycling program to promote  
20 recycling of project components, properly dispose of hazardous wastes, and minimize disposal in  
21 landfills. Upon decommissioning, the solar site could be converted to other uses in accordance  
22 with applicable land-use regulations in effect at that time. As discussed under “Construction” and  
23 “Operation and Maintenance,” implementation of Mitigation Measures MM 3.9-1a, MM 3.9-1b,  
24 MM 3.9-2a, MM 3.9-3a, MM 3.9-3b, and MM 3.9-4b, would require hazardous material  
25 containment, reporting, and remediation requirements in the event of a spill or accidental release  
26 and would reduce potential impacts from use of hazardous materials at the site. After  
27 decommissioning activities, hazardous materials would not be present. In summary, Mitigation  
28 Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a, MM 3.9-3b, MM 3.9-  
29 4b, and MM 3.9-7b would prevent or minimize damage to public health, safety, and the  
30 environment from the transport, use, or disposal of hazardous materials. Therefore, impacts  
31 concerning the routine transport, use, or disposal of hazardous materials would be less than  
32 significant with mitigation incorporated.

### 33 **Mitigation Measures**

34 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a,  
35 MM 3.9-3b, MM 3.9-4b, and MM 3.9-7b (see Section 3.9.5 for mitigation measures).

### 36 **Level of Significance after Mitigation**

37 Impacts would be less than significant.

1 **Impact 3.9-2: Create a significant hazard to the public or the environment through**  
2 **reasonably foreseeable upset and accident conditions involving the release of hazardous**  
3 **materials into the environment.**

4 **Construction, Operation and Maintenance, and Decommissioning**

5 Construction, operation and maintenance, and decommissioning activities associated with  
6 Alternative A would require limited use of hazardous materials. Potential impacts that may result  
7 from construction of the proposed project may include the accidental release of hazardous  
8 materials, such as cleaning fluids, asbestos containing material, and petroleum products, stored  
9 onsite. Implementation of Mitigation Measures MM 3.9-4a and MM 3.9-6b, would require  
10 compliance with all applicable Federal, State, and local laws for the identification, removal, and  
11 disposal, of any potential asbestos containing materials that may be encountered during project  
12 construction. Additionally, if unrecorded wells are identified within the gen-tie site during  
13 excavation or grading activities, release of potentially hazardous substances into those wells may  
14 present a significant impact resulting from the proposed project. However, implementation of  
15 Mitigation Measure 3.9-5b for the gen-tie portion of the project site would ensure that the project  
16 proponent coordinates with the California Department of Conservation, Division of Oil, Gas, and  
17 Geothermal Resources to prevent the release of hazardous materials into the surrounding  
18 environment in the event that an unrecorded well is encountered.

19 The PV modules and inverters would produce no waste during operation. If solar panels  
20 containing CdTe are used at the project site, CdTe releases would be unlikely to occur as a result  
21 of accidental damage to the crystalline silicon PV panels. Similarly, fire damage is unlikely to  
22 result in the release of CdTe. Appendix B1 presents additional information regarding CdTe.  
23 Mineral oil would be located in each enclosed transformer, but secondary containment would be  
24 provided in accordance with applicable federal, state, and local laws and regulations. The mineral  
25 oil contained in each transformer does not normally require replacement, and mineral oil disposal  
26 would be in accordance with all applicable federal, state, and local laws and regulations. As stated  
27 previously, no schools are located in the vicinity of the project area. An adverse risk related to  
28 exposure to hazardous materials would not result from the installation and use of transformers,  
29 grading of the site, the application of herbicides, or other construction or operation processes  
30 because of the distance between the sensitive receptors and the project site. In addition, the  
31 proposed project would not involve the routine transport, use, or disposal of hazardous materials  
32 as defined by the Hazardous Materials Transportation Uniform Safety Act.

33 The closest designated route for the transport of hazardous materials is SR 14, which is located  
34 1 mile west of the project site. Adherence to regulations and standard protocols during the  
35 storage, transportation, and usage of any hazardous materials would minimize and avoid the  
36 potential for significant impacts. Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM  
37 3.9-2b, MM 3.9-3a, MM 3.9-3b, MM 3.9-4b, and MM 3.9-7b would prevent or minimize damage  
38 to public health, safety, and the environment from the use, release, or threatened release of  
39 hazardous materials. In addition, hazardous materials and waste management during construction  
40 activities would follow the requirements of the Hazardous Material Management Process and  
41 Hazardous Waste Management Plan for Edwards AFB. Therefore, impacts concerning reasonably

1 foreseeable upset and accident conditions involving the release of hazardous materials into the  
2 environment would be less than significant with mitigation incorporated.

3 **Mitigation Measures**

4 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a,  
5 MM 3.9-3b, MM 3.9-4a, MM 3.9-4b, MM 3.9-5a, MM 3.9-5b, MM 3.9-6b, and MM 3.9-7b (see  
6 Section 3.9.5 for mitigation measures).

7 **Level of Significance after Mitigation**

8 Impacts would be less than significant.

9 **Impact 3.9-3: Be located on a site that is included on a list of hazardous materials sites**  
10 **compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a**  
11 **significant hazard to the public or the environment.**

12 As identified in the scoping comment letter from DTSC, the proposed gen-tie line would pass  
13 near or through multiple sites subject to land-use restrictions by DTSC (DTSC, 2013).  
14 Implementation of Mitigation Measure MM 3.9-7b would ensure that the construction of the  
15 gen-tie line would not disturb any contaminated soils or remedial equipment on these properties.  
16 Edwards AFB is on the National Priorities List of Uncontrolled Hazardous Waste Sites under  
17 CERCLA as a property of environmental concern. The Air Force will perform final cleanup  
18 actions for a variety of sites in the operable unit areas after they select final remedies in RODs.  
19 Based on the USEPA Briefing Map, dated June 2008, potential contamination plumes appear to  
20 be generally down-gradient and outside of the immediate vicinity of the proposed project site.  
21 Thus, it is unlikely that construction, operation and maintenance, and decommissioning activities  
22 associated with the project would encounter contaminated materials on the base. Therefore,  
23 impacts related to hazards associated with project implementation on listed hazardous materials  
24 sites would be less than significant with mitigation incorporated.

25 **Mitigation Measures**

26 Implement Mitigation Measure MM 3.9-7b (see Section 3.9.5 for mitigation measures).

27 **Level of Significance after Mitigation**

28 Impacts would be less than significant.

29 **Impact 3.9-4: Exposes people or structures to a significant risk of loss, injury, or death**  
30 **involving wildland fires, including where wildlands are adjacent to urbanized areas or**  
31 **where residences are intermixed with wildlands.**

32 As discussed previously under the NEPA analysis, Alternative A would not increase the potential  
33 for wildland fires or expose people or structures to a significant risk of loss, injury, or death  
34 involving wildland fires. All project components would be located within a Moderate Fire Hazard  
35 Severity Zone as identified by the CAL FIRE State and Local Responsibility Maps. Moderate  
36 zones are typically wildland supporting areas of low fire frequency and relatively modest fire  
37 behavior. The proposed project would comply with all applicable wildland fire management plans  
38 and policies established by CAL FIRE and the Kern County Fire Department. Additionally,

1 implementation of Mitigation Measure MM 3.9-6a for the solar facility portion of the project site  
2 and Mitigation Measure MM 3.9-8b for the gen-tie portion of the site, would require the  
3 preparation of a Fire Safety Plan, which would further reduce potential impacts from wildland  
4 fires. Accordingly, Alternative A is not expected to expose people or structures to a significant  
5 risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than  
6 significant.

#### 7 **Mitigation Measures**

8 Implement Mitigation Measures MM 3.9-6a and MM 3.9-8b (see Section 3.9.5 for mitigation  
9 measures).

#### 10 **Level of Significance after Mitigation**

11 Impacts would be less than significant.

### 12 **3.9.3.2 Alternative B: 1,500-Acre EUL**

#### 13 ***NEPA: Environmental Impacts***

##### 14 **Construction**

15 Alternative B includes the construction, operation, and decommissioning of a utility-scale PV  
16 solar facility on up to a maximum of 1,500 acres of non-excess real property located within the  
17 same site as Alternative A. Alternative B would utilize the same gen-tie line route option  
18 proposed in Alternative A. Adverse effects would be similar to those described for Alternative A,  
19 however, because Alternative B would result in approximately one-third the physical  
20 development of Alternative A, it is likely that this alternative would result in a reduced  
21 construction schedule, thereby reducing the amount of time that hazardous materials are used,  
22 stored or transported. This reduction would result in an incremental reduction in the potential for  
23 accidental releases of hazardous materials to occur during these activities.

24 Like Alternative A, Alternative B would be located within a Moderate Fire Hazard Severity Zone  
25 as identified by the CAL FIRE State and Local Responsibility Maps. The reduced scale of the  
26 Proposed Action would likely reduce the amount of time heavy machinery would be onsite,  
27 thereby incrementally reducing the potential to generate sparks that could ignite a wildfire. The  
28 Proposed Action would comply with all applicable wildland fire management plans and policies  
29 established by CAL FIRE, the Kern County Fire Department, and CPUC. Accordingly, the  
30 Proposed Action is not expected to expose people or structures to a significant risk of loss, injury,  
31 or death involving wildland fires.

##### 32 **Operation and Maintenance**

33 Alternative B would result in the same hazardous materials effects as described for Alternative A.  
34 However, because of the reduced size of this alternative, the geographic area within Alternative B  
35 would be smaller than for Alternative A. This smaller size would limit the area within which  
36 hazards to the public, workers, and environmental could result and would incrementally reduce  
37 the amount of hazardous materials that are used, stored or transported. Consequently, hazardous  
38 materials-related impacts associated with the operation and maintenance of Alternative B  
39 would be reduced relative to Alternative A.

1 Operation and Maintenance of Alternative B would result in the same wildfire impacts as  
2 described for Alternative A.

### 3 **Decommissioning**

4 Alternative B would cause the same decommissioning-related hazardous materials impacts as  
5 Alternative A; however, Alternative B's reduced project size would constrain the area within  
6 which accidents or upsets could occur and thereby release hazardous materials. Consequently,  
7 hazards and hazardous materials-related impacts associated with decommissioning Alternative B  
8 would be reduced relative to Alternative A.

9 The reduced scale of the Proposed Action would likely reduce the amount of time heavy  
10 machinery would be onsite during decommissioning activities, thereby incrementally reducing  
11 the potential to generate sparks that could ignite a wildfire. The decommissioning of Alternative  
12 B would result in similar wildfire impacts as described for Alternative A.

### 13 **CEQA: Impact Significance Determination**

14 The impacts for Alternative B would be similar to those described under the CEQA analysis for  
15 Alternative A (Impacts 3.9-1 through 3.9-4) above. However, because Alternative B would result  
16 in approximately one-third the physical development of Alternative A, it is likely that this  
17 alternative would result in a reduced construction schedule, thereby reducing the amount of time  
18 that hazardous materials are used or stored on site. However, because this alternative would result  
19 in use and storage of the same types of hazardous materials as Alternative A, significance  
20 conclusions for the impacts identified for each phase of Alternative B (Construction, Operation  
21 and Maintenance, and Decommissioning) would be same as described above for Alternative A.  
22 Impacts concerning the routine transport, use, or disposal of hazardous materials; accidental  
23 release of hazardous materials; and project implementation within listed hazardous materials sites  
24 would be less than significant with mitigation incorporated.

25 The reduced scale of Alternative B would likely reduce the amount of time heavy machinery  
26 would be onsite during construction and decommissioning activities, thereby incrementally  
27 reducing the potential to generate sparks that could ignite a wildfire. The entire project would be  
28 located within a Moderate Fire Hazard Severity Zone as identified by the CAL FIRE State and  
29 Local Responsibility Maps. Therefore, impacts related to exposure of people or structures to a  
30 significant risk of loss, injury, or death involving wildland fires would be the same as identified  
31 for Alternative A.

### 32 **Mitigation Measures**

33 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a,  
34 MM 3.9-3b, MM 3.9-4a, MM 3.9-4b, MM 3.9-5a, MM 3.9-5b, MM 3.9-6a, MM 3.9-6b, MM 3.9-  
35 7b, and MM 3.9-8b (see Section 3.9.5 for mitigation measures).

### 36 **Level of Significance after Mitigation**

37 Impacts would be less than significant.

### 3.9.3.3 Alternative C: No Action/No Project

#### **NEPA: Environmental Impacts**

Under this alternative, none of the components proposed under Alternative A would be built. If Alternative C were implemented, there would be no changes to onsite conditions or the existing environmental setting as described above. There would be no construction vehicles, hazardous materials use, or employees to access the site. Therefore, there would be no potential for accidental releases of hazardous materials to occur or for project related wildfire ignition or exposure. Thus, Alternative C would not significantly affect hazards or hazardous materials during the construction, operation and maintenance, and decommissioning phases.

#### **CEQA: Impact Significance Determination**

Alternative C would result in no impacts concerning wildfire; the routine transport, use, storage, or disposal of hazardous materials; accidental release of hazardous materials; and project implementation within listed hazardous materials sites.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Level of Significance after Mitigation**

Impacts would be less than significant.

## 3.9.4 Cumulative Impact Analysis

### **3.9.4.1 NEPA: Cumulative Environmental Effects and Their Significance**

Depending on the pathway of exposure, the geographic scope for cumulative effects relating to hazardous materials would be the air basin, watershed boundary, groundwater basin, or extent of affected soils. Materials delivery routes also would be included in the event of a traffic accident-related spill. The temporal scope of hazardous materials impacts would occur throughout the life of the Proposed Action. Many of the cumulative projects identified in Table 3-1 could cause similar impacts related to the potential for release of hazardous materials during routine use, transport, storage, and disposal for construction and operation of these projects. Specifically, other renewable energy projects, such as the Catalina Renewable Energy Project, Rosamond Solar Project, Kingbird Solar Project, Champagne Road Solar PV Project, etc., would involve the use, transportation and storage of similar hazardous materials required for the Proposed Action. An accident involving a hazardous materials release during project construction or operation through upset or accident conditions, including site grading and the use and transport of petroleum-based lubricants, solvents, fuels, herbicides, and pesticides to and from the project site, would be location specific.

Like the Proposed Action, construction, operation and maintenance, and decommissioning of other renewable energy projects could result in impacts related to the potential to encounter hazardous materials.

1 However, impacts caused by the cumulative projects, in combination with the Proposed Action,  
2 would not result in an adverse cumulative hazardous materials impact even if all of the projects  
3 were to be constructed simultaneously. Because of the distance from other projects considered in  
4 the cumulative analysis, an accidental release or discovery of hazardous materials at the Proposed  
5 Action site is not likely to result in combined impacts at the cumulative projects sites. In addition,  
6 like the Proposed Action, each of the cumulative projects would be required to follow all local,  
7 state and federal policies regarding the use, transportation and storage of hazardous materials and  
8 would include mitigation measures to minimize/avoid health effects to the surrounding  
9 communities. Therefore, the Proposed Action would not contribute to cumulative impacts from  
10 accidental releases or discovery of hazardous materials.

11 The geographic area for cumulative wildland fire impacts includes the area within 1 mile of the  
12 site boundary for wildland fire impacts, and the temporal scope for cumulative wildland fire  
13 impacts includes the duration of construction, operation, and decommissioning of the Proposed  
14 Action. A cumulative wildland fire impact would occur if multiple projects were to increase the  
15 frequency of fires in the same location. Approximately 3 reasonably foreseeable projects are  
16 located within 1 mile of the Proposed Action (see Figure 3-1). The Proposed Action would likely  
17 be under construction concurrently with at least one of these projects. The cumulative  
18 construction impacts of projects under construction at the same time as the Proposed Action could  
19 result in increased wildfire ignitions due to the use of heavy equipment, smoking, or welding. The  
20 combination of several projects being constructed concurrently in the cumulative study area could  
21 substantially increase the frequency of fire in the area above natural conditions. However, the  
22 Proposed Action and cumulative projects are located within a Moderate Fire Hazard Severity  
23 Zone and must comply with all applicable wildland fire management plans and policies  
24 established by CAL FIRE, the Kern County Fire Department, and CPUC (if applicable). As a  
25 result, the overall cumulative increase in fire frequency would not be substantial.

26 Operation of the Proposed Action could result in wildfire ignitions due to the use of outdoor  
27 equipment or smoking. Transmission lines can cause wildfire ignitions if maintenance is not  
28 properly conducted, if a low-flying plane or helicopter were to crash into the line, or as a result of  
29 wildlife collisions. Because the proposed enhanced-use lease (EUL) would last up to 35 years, it  
30 is likely that the Proposed Action would operate concurrently with all reasonably foreseeable  
31 projects in the cumulative study area. Wildfire ignitions due to operation and use of these  
32 cumulative projects could substantially increase the frequency of wildfire ignitions. However, the  
33 Proposed Action and cumulative projects are located within a Moderate Fire Hazard Severity  
34 Zone and must comply with all applicable wildland fire management plans and policies  
35 established by CAL FIRE, the Kern County Fire Department, and CPUC (if applicable). As a  
36 result, the overall cumulative increase in fire frequency would not be substantial.

37 Decommissioning of the Proposed Action could possibly occur at the same time as at least one of  
38 the projects in the cumulative study area. The cumulative decommissioning impacts of projects  
39 under decommissioning at the same time as the Proposed Action could result in increased wildfire  
40 ignitions due to the use of heavy/electrical equipment or smoking. The combination of several  
41 projects being decommissioned concurrently in the cumulative study area could substantially  
42 increase the frequency of fire in the area above natural conditions. However, the Proposed Action

1 and cumulative projects are located within a Moderate Fire Hazard Severity Zone and must  
2 comply with all applicable wildland fire management plans and policies established by CAL  
3 FIRE, the Kern County Fire Department, and CPUC (if applicable). As a result, the overall  
4 cumulative increase in fire frequency would not be substantial.

### 5 **3.9.4.2 CEQA: Cumulative Impact Significance Determination**

6 Impacts for the cumulative CEQA analysis would be the same as those described under the  
7 cumulative NEPA analysis above. Project implementation within listed hazardous materials sites  
8 would be less than significant with implementation of Mitigation Measures MM 3.9-1a, MM 3.9-  
9 1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a, MM 3.9-3b, MM 3.9-4a, MM 3.9-4b, MM 3.9-5a, MM  
10 3.9-5b, MM 3.9-6a, MM 3.9-6b, MM 3.9-7b, and MM 3.9-8b.

11 In addition, like the proposed project, each of the cumulative projects would be required to follow  
12 all local, state, and federal policies regarding wildfire hazards, in addition to the use,  
13 transportation and storage of hazardous materials and would include mitigation measures to  
14 minimize/avoid health effects to the surrounding communities. Therefore, the Proposed Action  
15 would not contribute to cumulative impacts from accidental releases or discovery of hazardous  
16 materials. Cumulative impacts related to wildfire; the routine transport, use, storage, or disposal  
17 of hazardous materials; accidental release of hazardous materials; or the accidental release of  
18 hazardous materials would be less than significant.

#### 19 **Mitigation Measures**

20 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a,  
21 MM 3.9-3b, MM 3.9-4a, MM 3.9-4b, MM 3.9-5a, MM 3.9-5b, MM 3.9-6a, MM 3.9-6b, MM 3.9-  
22 7b, and MM 3.9-8b (see Section 3.9.5 for mitigation measures).

#### 23 **Level of Significance after Mitigation**

24 Impacts would be less than significant.

## 25 **3.9.5 Mitigation Measures**

### 26 **3.9.5.1 Solar Facility Mitigation Measures**

27 **MM 3.9-1a: Hazardous Materials Business Plan.** Prior to the issuance of grading or building  
28 permits, the project proponent shall prepare a Hazardous Materials Business Plan and submit it to  
29 Kern County for review and approval.

- 30 1. The Hazardous Materials Business Plan shall:
  - 31 a. Delineate hazardous material and hazardous waste storage areas;
  - 32 b. Describe proper handling, storage, transport, and disposal techniques;
  - 33 c. Describe methods to be used to avoid spills and minimize impacts in the event of  
34 a spill;
  - 35 d. Describe procedures for handling and disposing of unanticipated hazardous  
36 materials encountered during construction;
  - 37 e. Establish public and agency notification procedures for spills and other  
38 emergencies including fires; and

- 1 f. Include procedures to avoid or minimize dust from existing residual pesticide and  
2 herbicide use that may be present on the site.
- 3 2. The project proponent shall provide the Hazardous Materials Business Plan to all  
4 contractors working on the project and shall ensure that one copy is available at the project  
5 site at all times.
- 6 3. A copy of the approved Hazardous Materials Business Plan shall be submitted to the Air  
7 Force.

8 **MM 3.9-2a: Spill Prevention, Control, and Countermeasure Plan.** Prior to the issuance of  
9 grading or building permits by the County and/or a Notice to Proceed from the Air Force, the  
10 developer shall prepare and submit a Spill Prevention, Control, and Countermeasure Plan to Kern  
11 Count and to the Air Force for review. The plan will be for the storage and use of transformer oil,  
12 gasoline, or diesel fuel at the site in quantities of 660 gallons or greater. The purpose of the plan  
13 will be to mitigate the potential effects of a spill of transformer oil, gasoline, or diesel fuel. The  
14 plan shall include design features of the project that will contain accidental releases of petroleum  
15 and transformer oil products from on-site fuel tanks and transformers.

16 **MM 3.9-3a: Herbicide Control.**

- 17 1. The project proponent shall continuously comply with Edwards Integrated Pest  
18 Management Plan and the following:
  - 19 g. The construction contractor or project personnel shall use herbicides that are  
20 approved for use in California, and are appropriate for application adjacent to  
21 natural vegetation areas (i.e. non-agricultural use. Personnel applying herbicides  
22 shall have all appropriate state and local herbicide applicator licenses and comply  
23 with all state and local regulations regarding herbicide use.
  - 24 h. Herbicides shall be mixed and applied in conformance with the manufacturer's  
25 directions.
  - 26 i. The herbicide applicator shall be equipped with splash protection clothing and  
27 gear, chemical resistant gloves, chemical spill/splash wash supplies, and material  
28 safety data sheets for all hazardous materials to be used. To minimize harm to  
29 wildlife, vegetation, and water bodies, herbicides shall not be applied directly to  
30 wildlife.
  - 31 j. Products identified as non-toxic to birds and small mammals shall be used if nests  
32 or dens are observed; and herbicides shall not be applied if it is raining at the site,  
33 rain is imminent, or the target area has puddles or standing water.
  - 34 k. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If  
35 spray is observed to be drifting to a non-target location, spraying shall be  
36 discontinued until conditions causing the drift have abated.
- 37 2. The project proponent shall continuously comply with the following:
  - 38 a. The construction contractor or project personnel shall use herbicides that are  
39 approved for use in California, and are appropriate for application adjacent to  
40 natural vegetation areas (i.e. non-agricultural use. Personnel applying herbicides  
41 shall have all appropriate state and local herbicide applicator licenses and comply  
42 with all state and local regulations regarding herbicide use.
  - 43 b. Herbicides shall be mixed and applied in conformance with the manufacturer's  
44 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.

**MM 3.9-4a: Asbestos-containing Material.** The project proponent shall continuously comply with the following:

1. In the event that suspect asbestos-containing materials (almost anything other than unpainted metal, glass or wood, to include soil in certain locations/circumstances) are uncovered and/or disturbed during project construction, work at the project site shall immediately halt and an appropriate certified asbestos hazardous materials professional (typically a California Certified Asbestos Consultant) shall be contacted and brought to the project site to make a proper assessment of the suspect materials.
2. All potentially friable asbestos-containing materials shall be removed in accordance with Federal, State, and local laws and the National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines prior to ground disturbance that may disturb such materials. Per the Asbestos NESHAP "... prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM."
3. All demolition activities shall be undertaken in accordance with California Occupational Safety and Health Administration standards, as contained in Title 8 of the California Code of Regulations, Section 1529, to protect workers from exposure to asbestos. Materials containing more than one percent asbestos shall also be subject to Eastern Kern Air Pollution Control District's regulations. Asbestos in soil is or may be further regulated by California Air Resources Board. Demolition/Renovation shall be performed in conformance with Federal, State, and local laws and regulations, to include the Asbestos NESHAP so that construction workers and/or the public avoid significant exposure to asbestos and asbestos-containing materials.

**MM 3.9-5a: Herbicide Application.** The project proponent shall continuously comply with the following:

Herbicides shall be applied in accordance with the current Edwards Air Force Base Integrated Pest Management Plan. Physical, mechanical, or other measures must be used to remove or control weeds. Least hazardous, but effective, herbicides shall be used as a last resort.

**MM 3.9-6a: Fire Safety Plan.** Prior to the issuance of grading or building permits, the project proponent shall develop and implement a fire safety plan for use during construction and operation. The project proponent will submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. The fire safety plan

1 will contain notification procedures and emergency fire precautions including, but not limited to  
2 the following:

- 3 1. All internal combustion engines, both stationary and mobile, shall be equipped with spark  
4 arresters. Spark arresters will be in good working order.
- 5 2. Light trucks and cars with factory-installed (type) mufflers will be used only on roads  
6 where the roadway is cleared of vegetation. These vehicle types will maintain their factory-  
7 installed (type) muffler in good condition.
- 8 3. Fire rules will be posted on the project bulletin board at the contractor's field office and  
9 areas visible to employees.
- 10 4. Equipment parking areas and small stationary engine sites will be cleared of all extraneous  
11 flammable materials.
- 12 5. Personnel shall be trained in the practices of the fire safety plan relevant to their duties.  
13 Construction and maintenance personnel shall be trained and equipped to extinguish small  
14 fires to prevent them from growing into more serious threats.
- 15 6. The project proponent shall make an effort to restrict the use of chainsaws, chippers,  
16 vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods  
17 outside of the official fire season. When the above tools are used, water tanks equipped  
18 with hoses, fire rakes, and axes shall be easily accessible to personnel.

### 19 **3.9.5.2 Gen-tie Mitigation Measures**

20 **MM 3.9-1b: Hazardous Materials Business Plan.** Prior to the issuance of grading or building  
21 permits, and throughout the life of the project, including decommissioning, the project proponent  
22 shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant  
23 to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern  
24 County Ordinance Code 8.04.030, by submitting all required information to the California  
25 Environmental Reporting System (CERS) at <http://cers.calepa.ca.gov/> for review and approval.

- 26 1. The HMBP shall:
  - 27 a. Delineate hazardous material and hazardous waste storage areas;
  - 28 b. Describe proper handling, storage, transport, and disposal techniques;
  - 29 c. Describe methods to be used to avoid spills and minimize impacts in the event of  
30 a spill;
  - 31 d. Describe procedures for handling and disposing of unanticipated hazardous  
32 materials encountered during construction;
  - 33 e. Establish public and agency notification procedures for spills and other  
34 emergencies including fires; and
  - 35 f. Include procedures to avoid or minimize dust from existing residual pesticide and  
36 herbicide use that may be present on the site.
- 37 2. The project proponent shall provide that all contractors working on the project are  
38 familiar with the facility's HMBP as well as ensure that one copy is available at the  
39 generation tie-line sites at all times.
- 40 3. In addition, a copy of the approved HMBP from CERS shall be submitted to the Kern  
41 County Planning and Natural Resources Department for inclusion in the project's  
42 permanent record.

1 **MM 3.9-2b: Recycle Construction Waste.** During construction and decommissioning of  
2 generation tie-lines, debris and waste generated shall be recycled to the extent feasible. The  
3 project proponent/operator shall designate a Recycling Coordinator to facilitate recycling of all  
4 waste through coordination with the onsite contractors, local waste haulers, and/or other facilities  
5 that recycle construction/demolition wastes. The Recycling Coordinator shall also be responsible  
6 for ensuring that wastes requiring special disposal are handled according to State and County  
7 regulations that are in effect at the time of disposal. The name and phone number of the  
8 coordinator shall be provided to the Kern County Planning and Natural Resources Department.

9 **MM 3.9-3b: Spill Prevention, Control, and Countermeasure Plan.** Prior to the issuance of  
10 grading or building permits for the generation tie-line installation, the developer shall prepare and  
11 submit a Spill Prevention, Control, and Countermeasure Plan to the California Environmental  
12 Protection Agency, and the Kern County Planning and Natural Resources Department for review.  
13 The plan will be for the storage and use of transformer oil, gasoline, or diesel fuel at the  
14 generation tie-line sites. The purpose of the plan will be to mitigate the potential effects of a spill  
15 of transformer oil, gasoline, or diesel fuel. The plan shall include design features of the generation  
16 tie-line installation project that may contain accidental releases of petroleum and transformer oil  
17 products from on-site fuel tanks and transformers.

18 **MM 3.9-4b: Herbicide Control.** The project proponent shall continuously comply with the  
19 following:

- 20 1. The construction contractor or project personnel shall use herbicides that are approved for  
21 use by the Environmental Protection Agency, are appropriate for use in California and for  
22 application adjacent to natural vegetation areas (i.e. non-agricultural use). Workers who  
23 apply herbicides shall have all appropriate State and local herbicide applicator licenses and  
24 comply with all State and local regulations regarding herbicide use.
- 25 2. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
- 26 3. The herbicide applicator shall be equipped with splash protection clothing and gear,  
27 chemical resistant gloves, chemical spill/splash wash supplies, and material safety data  
28 sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and  
29 water bodies, herbicides shall not be applied directly to wildlife.
- 30 4. Products identified as non-toxic to birds and small mammals shall be used if nests or dens  
31 are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent,  
32 or the target area has puddles or standing water.
- 33 5. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is  
34 observed to be drifting to a non-target location, spraying shall be discontinued until  
35 conditions causing the drift have abated.
- 36 6. A written record of all herbicide applications on site, including dates and amounts, shall be  
37 furnished to the California State Lands Commission on a monthly basis.

1 **MM 3.9-5b: Notify California Department of Conservation, Division of Oil, Gas, and**  
2 **Geothermal Resources.** The project proponent shall comply with the following:

- 3 1. In the event any abandoned or unrecorded wells are uncovered or damaged during  
4 excavation or grading activities, all work shall cease in the vicinity of the well, and the  
5 California Department of Conservation, Division of Oil, Gas, and Geothermal Resources,  
6 shall be contacted for requirements and approval; copies of said approvals shall be  
7 submitted to the Kern County Planning and Natural Resources Department.
- 8 2. The California Department of Conservation, Division of Oil, Gas, and Geothermal  
9 Resources, may determine that remedial plugging operations may be required and shall be  
10 contacted and brought to the generation tie-line site to make a proper assessment of the  
11 suspect materials.

12 **MM 3.9-6b: Asbestos-containing Material.** The project proponent shall comply with the  
13 following:

- 14 1. In the event that suspect asbestos-containing materials are uncovered during project  
15 construction, work within the vicinity of the discovery shall immediately halt and a  
16 certified asbestos hazardous materials professional shall be contacted and brought to the  
17 generation tie-line site to make a proper assessment of the suspect materials.
- 18 2. All potentially friable asbestos containing materials shall be removed in accordance with  
19 Federal, State, and local laws and the National Emissions Standards for Hazardous Air  
20 Pollutants guidelines prior to ground disturbance that may disturb such materials.
- 21 3. All demolition activities shall be undertaken in accordance with California Occupational  
22 Safety and Health Administration standards, as contained in Title 8 of the California Code  
23 of Regulations, Section 1529, to protect workers from exposure to asbestos. Materials  
24 containing more than one percent asbestos shall also be subject to Eastern Kern Air  
25 Pollution Control District's (EKAPCD) regulations. Demolition shall be performed in  
26 conformance with Federal, state, and local laws and regulations so that construction  
27 workers and/or the public avoid significant exposure to asbestos-containing materials.

28 **MM 3.9-7b: Environmental Contamination Avoidance.** If the generation tie line crosses  
29 contaminated soils or remedial equipment on the properties that have been land-use restricted by  
30 the California Department of Toxic Substances Control, a health and safety plan must be prepared  
31 to ensure that any construction workers, nearby residents or other sensitive receptors are protected  
32 from any contaminants that may become airborne during soil disturbance. Additionally, the caps  
33 installed to contain the contaminated soil cannot be punctured.

34 **MM 3.9-8b: Fire Safety Plan.** Prior to the issuance of grading or building permits, the project  
35 proponent shall develop and implement a fire safety plan for use during construction, operation,  
36 and decommissioning. The project proponent shall submit the plan, along with maps of the project  
37 generation tie-line sites and access roads, to the Kern County Fire Department for review and  
38 approval. The fire safety plan shall contain notification procedures and emergency fire precautions  
39 including, but not limited to the following:

- 1 1. All internal combustion engines, both stationary and mobile, shall be equipped with spark  
2 arresters. Spark arresters will be in good working order.
- 3 2. Light trucks and cars with factory-installed (type) mufflers will be used only on roads  
4 where the roadway is cleared of vegetation. These vehicle types will maintain their factory-  
5 installed (type) muffler in good condition.
- 6 3. Fire rules will be posted on the project bulletin board at the contractor's field office and  
7 areas visible to employees.
- 8 4. Equipment parking areas and small stationary engine sites will be cleared of all extraneous  
9 flammable materials.
- 10 5. Personnel shall be trained in the practices of the fire safety plan relevant to their duties.  
11 Construction and maintenance personnel shall be trained and equipped to extinguish small  
12 fires to prevent them from growing into more serious threats.
- 13 6. The project proponent shall make an effort to restrict the use of chainsaws, chippers,  
14 vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods  
15 outside of the official fire season. When the above tools are used, water tanks equipped  
16 with hoses, fire rakes, and axes shall be easily accessible to personnel.

### 17 3.9.6 Residual Impacts after Mitigation

18 Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-2a, MM 3.9-2b, MM 3.9-3a, MM 3.9-3b,  
19 MM 3.9-4a, MM 3.9-4b, MM 3.9-5a, MM 3.9-5b, MM 3.9-6a, MM 3.9-6b, MM 3.9-7b, and MM  
20 3.9-8b would substantially reduce potential impacts associated with the use, storage, or handling  
21 of hazardous substances or the existence of other hazardous conditions at the project site by  
22 requiring implementation of preventative measures and precautions. These measures also require  
23 that necessary licenses and permits be obtained and those hazardous substances only be handled  
24 and used by properly trained and certified personnel.

25 Although unlikely, following implementation of the mitigation measures, it is possible that an  
26 accidental hazardous material release could occur and cause a safety risk to the human  
27 environment. No other residual impacts are expected to occur as a result of construction,  
28 operation and maintenance, and/or decommissioning of the proposed project or as a result of an  
29 alternative.

30



## 3.10 Infrastructure

### 3.10.1 Affected Environment

This section of the EIS/EIR describes the affected environment for infrastructure in the proposed project area, including the regulatory and environmental settings.

#### 3.10.1.1 Scoping Issues Addressed

The following public comments related to infrastructure were received and are addressed in this section:

- Direct impacts of waste generation from construction and operation should be included in the EIS/EIR.
- The method of water supply and sewage disposal for the project requires approval by the Kern County Environmental Health Division.

#### 3.10.1.2 Regulatory Framework

##### *Federal*

There are no federal regulations related to infrastructure that apply to the proposed project or alternatives.

##### *State*

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB sets statewide policy for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement Basin Plans that recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The project sites are within the jurisdiction of the Lahontan Region.

SWRCB Resolution No. 2012-0032 is the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS) establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS and replacements and sets the level of performance and protection expected from OWTS in order to avoid water quality degradation and protect public health..

The California Public Utilities Commission regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. It is tasked with ensuring that safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

The California Department of Resources Recycling and Recovery (CalRecycle) is the state agency designated to oversee, manage, and track the 76 million tons of waste generated in California each year. CalRecycle works jointly with local government to implement regulations and fund programs.

1 The Integrated Waste Management Act of 1989 (Public Resources Code [PRC] 40050 et seq. or  
2 Assembly Bill [AB] 939, codified in PRC 40000), administered by CalRecycle, requires all local  
3 and county governments to adopt a Source Reduction and Recycling Element to identify means of  
4 reducing the amount of solid waste sent to landfills.

5 Pursuant to the California Integrated Solid Waste Management Act of 1989, all cities in California  
6 are required to reduce the amount of solid waste disposed in landfills. Assembly Bill (AB) 939  
7 required a reduction of 25 percent by 1995 and 50 percent by 2000. Contracts that include work  
8 that will generate solid waste, including construction and demolition debris, have been targeted for  
9 participation in source-reduction, reuse, and recycling programs. The developer is urged to manage  
10 solid waste generated by the work to divert waste from disposal in landfills (particularly Class III  
11 landfills) and maximize source reduction, reuse, and recycling of construction and demolition  
12 debris.

13 The State has come a long way since the passage of the AB 939; state diversion rates are now  
14 equivalent to 65 percent, the statewide recycling rate is 50 percent, and the beverage container  
15 recycling rate is 80 percent. With the passage of AB 341 (Chesbro, Chapter 476, Statutes of 2011),  
16 the Governor and the Legislature established a policy goal for the State that a minimum of 75  
17 percent of solid waste must be reduced, recycled, or composted by the year 2020. The State  
18 provided the following strategies to achieve that 75 percent goal:

- 19 1. Moving organics out of the landfill
- 20 2. Expanding the recycling/manufacturing infrastructure
- 21 3. Exploring new approaches for state and local funding of sustainable waste management  
22 programs
- 23 4. Promoting state procurement of post-consumer recycled content products
- 24 5. Promoting extended producer responsibility

25 To achieve these strategies, the State recommended legislative and regulatory changes including  
26 mandatory organics recycling, solid waste facility inspections, and revising packaging. With regard  
27 to construction and demolition, the State recommended an expansion of the California Green  
28 Building Code standards that incentivize green building practices and increase diversion of  
29 recoverable construction and demolition materials. Current standards require 50 percent waste  
30 diversion on construction and some renovation projects, although this may be raised to 65 percent  
31 for nonresidential construction in upcoming changes to the standards. The State also recommended  
32 promotion of the recovery of construction and demolition materials suitable for reuse, compost, or  
33 anaerobic digestion before residual wastes are considered for energy recovery (CalRecycle, 2015).

34 As part of compliance with the State of California Green Building Code Requirements (CALGreen)  
35 that took effect beginning January 2011, the County implemented the following construction waste  
36 diversion requirements:

- 37 • Submittal of a Construction Waste Management Plan prior to project construction for  
38 approval by the Kern County Building Department

- 1       • Recycling and/or reuse of a minimum 50 percent of construction and demolition waste
- 2       • Recycling or reuse of 100 percent of tree stumps, rocks, and associated vegetation and soils
- 3       resulting from land clearing (Kern County, 2016)

4       The California Solid Waste Reuse and Recycling Access Act identified a lack of adequate areas for  
5       collecting and loading recyclable materials, resulting in a significant impediment to diverting solid  
6       waste. This act requires state and local agencies to address access to solid waste for source  
7       reduction, recycling, and composting activities.

8       The California Department of Water Resources (DWR) is a department within the California  
9       Resources Agency responsible for the state of California’s management and regulation of water  
10      usage.

11      California Water Code Section 10912 require preparation of a Water Supply Assessment for  
12      photovoltaic (PV) and wind energy projects that would occupy more than 40 acres of land. This  
13      law seeks to promote more collaborative planning among local water suppliers and cities and  
14      counties. It requires that water supply assessments occur early in the land use planning process for  
15      all large-scale development projects. It also requires an identification of existing water entitlements,  
16      rights, contracts, and a quantification of the prior year’s water deliveries.

17      California Water Code Section 13260 requires any person who discharges waste, other than into a  
18      community sewer system, or proposes to discharge waste that could affect the quality of waters of  
19      the state to submit a report of waste discharge to the applicable RWQCB.

20      Mojave Public Utilities District (MPUD) provides water service to the Mojave community and to  
21      wind and solar projects in the vicinity of the proposed project. MPUD obtains its water supply from  
22      groundwater wells and from the Antelope Valley–Eastern Kern Water Agency (AVEK). MPUD  
23      has a groundwater well located approximately 0.25 miles south of the intersection of State Highway  
24      58 Business and Lone Butte Road, approximately 7 miles northeast of the project sites (Appendix  
25      B20).

26      As proposed, water would be provided by the MPUD, which has indicated that it is prepared to  
27      provide water for the proposed project.

28      Title 8, Section 1541, of the California Code of Regulations requires excavators to determine the  
29      approximate locations of subsurface installations such as sewer, telephone, fuel, electric, and water  
30      lines prior to opening an excavation.

31      The California Government Code (Sections 4216 et seq.) requires owners and operators of  
32      underground utilities to become members of and participate in a regional notification center.  
33      Underground Services Alert of Northern California (known as USA North) receives planned  
34      excavation reports from public and private excavators and transmits those reports to all  
35      participating members of USA North that may have underground facilities at the location of  
36      excavation. Kern County is a participating member of USA North (Underground Service Alert,  
37      2018).

**1 Local**

2 The Kern County National Pollutant Discharge Elimination System (NPDES) Applicability form  
3 determines which water quality protection measure requirements apply to different projects (if any).  
4 Should stormwater runoff be contained onsite and not discharge to any waters, no special action is  
5 required. Should stormwater runoff discharge into waters of the United States compliance with  
6 SWRCB Construction General Permit requirements, including development of a Storm Water  
7 Pollution Prevention Plan (SWPPP) and its associated best management practices (BMPs) is  
8 required. Should stormwater runoff not be contained onsite but also not discharge to waters of the  
9 United States, implementation of requirements similar to those of the Construction General Permit  
10 is still required. With respect to the project, no waters of the United States are present on site in  
11 order to comply with the water quality objectives and standards contained in the Water Quality  
12 Control Plan for the Lahontan Region.

13 The public facilities and services, resources, and energy elements of the Kern County General Plan  
14 establish the goals, policies, and implementation measures related to hazardous materials and safety  
15 that are applicable to the project. The Public Facilities and Services element requires new  
16 development to pay its proportional share of the local costs of infrastructure improvements required  
17 to service such development and provide availability of public utility services, determine the need  
18 for fire protection services prior to approval of projects, and involve utility providers in the land  
19 use and zoning review process.

20 The Resources element requires that the County encourages safe and orderly energy development  
21 within the county, encourages development of alternative energy sources by tailoring its Zoning  
22 and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines  
23 published by the California State Energy Commission. It also requires that the development of  
24 resource areas minimizes effects on neighboring lands.

25 The General Provisions Element requires all new development projects to be subject to the  
26 Standards for Sewage, Water Supply, and Preservation of Environmental Health Rules and  
27 Regulations, administered by the Environmental Health Services Department.

28 The Energy Element encourages safe and orderly commercial solar development, and encourages  
29 solar projects to conserve fossil fuels and improve air quality. It also encourages solar development  
30 in the desert and valley regions previously disturbed and discourages the development of energy  
31 projects on undisturbed land supporting state or federally protected plant and wildlife species. The  
32 Energy Element encourages safe and orderly development of transmission lines which minimize  
33 potential adverse environmental effects. The Energy Element requires the County to review all  
34 proposed transmission lines and their alignments for conformity with the Land Use, Conservation,  
35 and Open Space Element of the General Plan, and to work with other agencies in establishing routes  
36 for proposed transmission lines. Lastly, the Energy Element encourages the County to monitor the  
37 supply and demand of electrical transmission capacity locally and statewide.

1 The Kern County General Plan provides goals and policies for the design features of development  
2 projects in order to reduce impacts of such projects. The policies and implementation measures in  
3 the Kern County General Plan for infrastructure that are applicable to the project are provided  
4 below. The Kern County General Plan contains additional policies, goals, and implementation  
5 measures that are more general in nature and are not specific to development such as the proposed  
6 project. Therefore, they are not listed below, but all policies, goals, and implementation measures  
7 in the Kern County General Plan are incorporated by reference.

8 **Kern County General Plan Chapter 1: Land Use, Open Space, and Conservation**  
9 **Element**

10 1.4 Public Facilities and Services

11 Policies

12 Policy 1: New discretionary development will be required to pay its proportional share of  
13 the local costs of infrastructure improvements required to service such  
14 development.

15 1.10 General Provisions

16 Goal

17 Goal 1: Ensure that the County can accommodate anticipated future growth and  
18 development while maintaining a safe and healthful environment and a prosperous  
19 economy by preserving viable natural resources, guiding development away from  
20 hazardous areas, and assuring the provision of adequate public services.

21 1.10.1 Public Services and Facilities

22 Policies

23 Policy 9: New development should pay its pro rata share of the local cost of expansions in  
24 services, facilities, and infrastructure that it generates and upon which it is  
25 dependent.

26 Policy 15: Prior to approval of any discretionary permit, the County shall make the finding,  
27 based on information provided by the California Environmental Quality Act  
28 (CEQA) documents, staff analysis, and the applicant, that adequate public or  
29 private services and resources are available to serve the proposed development.

30 Policy 16: The developer shall assume full responsibility for costs incurred in service  
31 extension or improvements that are required to ensure the project. Cost sharing or  
32 other forms of recovery shall be available when the service extensions or  
33 improvements have a specific quantifiable regional significance.

34 The Mojave Specific Plan's Land Use Element requires that future electricity demand for projects  
35 for the Mojave area account for increases proposed in the Specific Plan, and work with Southern  
36 California Edison (SCE) to modify and improve the electric power delivery system as the area  
37 grows.

1 The West Edwards Road Settlement Specific Plan requires that development utilize existing utility  
2 purveyors, and to pay its proportional share of the costs of local infrastructure improvements.  
3 According to this plan, undergrounding of all new utilities and/or distribution lines, and a fiscal  
4 impact analysis, is required.

5 The Willow Springs Specific Plan requires flood control channels and debris basins to be designed  
6 and constructed prior to the issuance of building permits in order to reduce or eliminate the potential  
7 for flooding and/or debris/mudflows to affect future developments. The Specific Plan also requires  
8 new development to pay its proportional share of local costs of infrastructure improvements  
9 required to service such development.

### 10 **3.10.1.3 Environmental Setting**

#### 11 ***Water Supply***

12 The project site is located within Edwards Air Force Base (AFB) and the unincorporated  
13 community of Mojave in Kern County. The project site is located within the boundaries of AVEK  
14 and the Rosamond Community Services District (RCSD). AVEK distributes up to 144,844 acre-  
15 feet per year (AFY) of imported wholesale water from the State Water Project throughout its  
16 jurisdiction (AVEK, 2016). AVEK provides water directly to customers within its service area and  
17 also distributes water to several water purveyors, including RCSD, which provides water within an  
18 approximately 31-square-mile service area adjacent to the western boundary of Edwards AFB.  
19 RCSD's water sources include a combination of surface water imported by AVEK and groundwater  
20 drawn from local wells (RCSD, 2014). RCSD currently serves approximately 5,000 households  
21 and businesses with a total demand of approximately 3,700 AFY (RCSD, 2018).

22 The primary sources of water supply on Edwards AFB include groundwater drawn from local wells  
23 and imported surface water purchased from AVEK. Average water demand on-base can normally  
24 be supplied by imported water from AVEK. Groundwater is used to supplement AVEK supplies in  
25 order to meet increased demand during summer months.

26 The solar facility site is currently undeveloped and does not contain onsite wells or any other water  
27 supply infrastructure. The majority of the proposed gen-tie line route options would follow areas  
28 with a variety of land uses, including existing roads, wind energy generating facilities, a historic  
29 railroad, modern transmission lines, existing residences, and agricultural/industrial uses.

#### 30 ***Stormwater Drainage***

31 The project area is underlain by the Gloster Subbasin within the Antelope Valley Hydrologic Unit  
32 of the South Lahontan Hydrologic Region. The South Lahontan Hydrologic Region abuts the  
33 eastern slope of the Sierra Nevada, and spring runoff from melting snowpack provides the majority  
34 of the region's surface water. The South Lahontan Hydrologic Region encompasses a total of  
35 26,732 square miles (16.9 percent of California), and occupies portions of Mono, Inyo, Kern, San  
36 Bernardino, and Los Angeles Counties.

37 The project site consists of undeveloped, relatively flat desert land with vegetation typical of the  
38 Mojave area. The local hydrology is characterized by ephemeral stream channels and washes

1 conveying surface runoff in a northwest to southeast direction, generally from the foothills of the  
2 Tehachapi Mountains toward the Rosamond and Rogers dry lakes on Edwards AFB. Hydrologic  
3 patterns within the project site are muted as a result of the low relief and arid nature of the region.  
4 Several ephemeral drainage areas occur within the project site, but are generally poorly defined and  
5 exhibit sandy substrate and minimal changes from surrounding vegetation. The project site is  
6 located in an enclosed hydrologic subbasin, in which no surface drainage reaches the ocean.  
7 Instead, surface flows are eventually lost to percolation and evaporation. Adjacent areas are, for  
8 the most part, undeveloped and do not have any existing stormwater drainage infrastructure.  
9 However, the typically low precipitation levels in the area coupled with the topography and the  
10 pervious soil covered sites results in minimal offsite drainage.

### 11 **Wastewater**

12 Wastewater generated on Edwards AFB is treated by one of two onsite wastewater treatment plants.  
13 There is no existing wastewater infrastructure or generation on the project site.

### 14 **Solid Waste**

15 California state law regulates the types of solid waste that can be disposed of at the different classes  
16 of landfills. Class I landfills may accept hazardous and nonhazardous wastes. Class II landfills may  
17 accept designated and nonhazardous wastes, and Class III landfills may accept nonhazardous  
18 wastes (refer to the following section for a description of appropriate disposal methods of waste  
19 generated at the project sites).

20 Kern County is responsible for meeting the California Integrated Waste Management Act of 1989  
21 (AB 939). AB 939 required cities and counties to reduce the amount of solid waste being sent to  
22 landfills by 50 percent by January 1, 2000. It also required cities and counties to prepare solid waste  
23 planning documents. These documents include the Source Reduction and Recycling Element, the  
24 Household Hazardous Waste Element, and the Nondisposal Facility Element. All three of these  
25 documents, as well as the Integrated Waste Management Plan, approved February 1998 by the  
26 California Integrated Waste Management Board, have been approved for Kern County. The Kern  
27 County Integrated Waste Management Plan is the long-range planning document for landfill  
28 facilities.

29 Construction and demolition waste is heavy, inert material. This material creates significant  
30 problems when disposed of in landfills. Because construction and demolition waste is heavier than  
31 paper and plastic, it is more difficult for counties and cities to reduce the tonnage of disposed waste.  
32 For this reason, construction and demolition waste has been specifically targeted by the state of  
33 California for diversion from the waste stream. Projects that generate construction and demolition  
34 waste should emphasize deconstruction and diversion planning rather than demolition.  
35 Deconstruction is the planned, organized dismantling of a prior construction project, which allows  
36 maximum use of the deconstructed materials for recycling in other construction projects and sends  
37 a minimum amount of the deconstruction material to landfills.

38 The Kern County Waste Management Department administers or sponsors the following recycling  
39 programs, which contribute toward meeting state-mandated solid waste diversion goals:

- 1       • Recycling programs at landfills to recycle or divert a wide variety of products, such as
- 2       wood waste, cathode ray tubes, tires, inert materials, appliances, etc.
- 3       • Drop-off recycling centers for household recyclables. The County- and the City-operated
- 4       drop-off recycling centers, which are located in the unincorporated metropolitan area and
- 5       the city, may be used by both county and city residents.
- 6       • Financial assistance for operation of the city of Bakersfield Green Waste Facility.
- 7       • The Kern County Special Waste Facility for the disposal of household hazardous waste.
- 8       Services are provided to all Kern County residents.
- 9       • Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and
- 10      available to both county and city residents (co-sponsor).
- 11      • Christmas tree recycling campaign (participates jointly with the city of Bakersfield).
- 12      • Telephone book recycling program (co-sponsors with Community Clean Sweep).
- 13      • Community Clean Sweep summer workshops called “Trash to Treasure,” which educate
- 14      children about recycling and other Kern County Waste Management Department programs
- 15      (sponsor).
- 16      • An innovative elementary school program called the “Clean Kids Hit the Road Puppet
- 17      Show” (operates in collaboration with Community Clean Sweep).
- 18      • Recycling trailers for churches, schools, and nonprofit organizations.

### 19      **Landfills**

20      The Kern County Waste Management Department operates seven landfills throughout the county.

21      Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft,

22      and Tehachapi (Kern County Waste Management, 2017). The project would be served primarily

23      by Mojave-Rosamond Landfill, which is located at 400 Silver Queen Road in Mojave, 2 miles north

24      of the project site. This Class III landfill accepts construction and demolition wastes, green

25      materials, inert metals, and mixed municipal waste. The Mojave-Rosamond Landfill daily

26      maximum capacity is 3,000 tons per day. The closure date for this landfill is in the year 2123

27      (CalRecycle, 2015a; Kern County Waste Management, 2012). This project was approved by the

28      Kern County Board of Supervisors on October 2, 2012 (Kern County Board of Supervisors, 2012).

29      The Lebec Transfer Station, located 19 miles west of the project site at 300 Landfill Road in Lebec,

30      replaced the Lebec Sanitary Landfill, which ceased operation in 2001. The Lebec Transfer Station

31      has a maximum throughput of 99 tons per day, and a permitted capacity of 25,540 tons per year.

32      Landfill and transfer station locations, capacity, and anticipated closure dates are presented in

33      **Table 3.10-1.**

1 **TABLE 3.10-1**  
 2 **SUMMARY OF KERN COUNTY WASTE MANAGEMENT LANDFILLS AND TRANSFER STATION**

Landfill	Permit Capacity (cubic yards)	Remaining Capacity (cubic yards)	Maximum Capacity (tons/day)	Ceased Operation Date
Mojave-Rosamond 400 Silver Queen Rd. Mojave	78,000,000	76,310,297	3,000	2123
	Permitted Throughput (tons/day)	Permitted Capacity (tons/year)	Total Acreage	Ceased Operation Date
Lebec Transfer Station 300 Landfill Rd. Lebec	99	25,540	5.6	N/A

SOURCE: CalRecycle, 2015a; CalRecycle, 2015b.

### 3 **Electricity**

4 SCE provides electrical supply to Edwards AFB and southeastern Kern County.

### 5 **Natural Gas**

6 Southern California Gas Company is the natural gas provider in southeastern Kern County and  
 7 Pacific Gas & Electric provides natural gas for Edwards AFB; however, there is no natural gas  
 8 service for the project site. Natural gas would not be required during construction, operation, or  
 9 decommissioning of the project. Therefore, the project would not place any demand on existing  
 10 natural gas systems.  
 11

## 12 **3.10.2 Environmental Consequences**

13 This section describes the environmental consequences relating to infrastructure for the proposed  
 14 project. It describes the methods used to determine the effects of the proposed project and lists the  
 15 thresholds used to conclude whether an effect would be significant.

### 16 **3.10.2.1 Assessment Methods/Methodology**

17 Current data obtained from the Edwards AFB, County, and State of California about the capacity  
 18 of water suppliers, sewage, and landfills were used to identify potential impacts. The evaluation of  
 19 project impacts is based on professional judgment, analysis of the County policies, and significance  
 20 criteria established in Appendix G of the CEQA Guidelines, which the County has determined  
 21 appropriate for the EIS/EIR.

### 3.10.2.2 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact is significant related to infrastructure if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice. A project could have a have a significant adverse effect on infrastructure if it would:

- Exceed wastewater treatment requirements of the applicable regional water quality control board.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require new or expanded water supply entitlements.
- 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.
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

The lead agency determined in the NOP that the following environmental issue area would result in no impacts or less-than-significant impacts and were therefore scoped out of requiring further review. Appendix A1 of this EIS/EIR contains a copy of the NOP and additional information regarding these issue areas.

- Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

### 3.10.3 Analysis of Environmental Effects

#### 3.10.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### ***NEPA: Environmental Impacts***

Utilities that could potentially be affected by the proposed project include water and sewer infrastructure.

##### **Construction**

The 2-year project construction period is estimated to require up to 200 AFY of water to support concrete manufacturing, dust control, and sanitation. Wastewater comprised primarily from sanitary waste generated during project construction is typically contained within portable toilet facilities. Wastewater generated by the proposed project would be contained within portable toilet facilities that would be provided and routinely emptied by a County-registered and permitted

1 portable toilet rental and sewage pumping business. No sewage or disposal connections to the  
2 Edwards AFB sewer system or a municipal sewer system are anticipated. Therefore, the proposed  
3 project would not affect existing sewer systems.

4 As described in this section, there are no electrical, natural gas, potable water connections, or other  
5 utility lines located within the proposed project site on Edwards AFB; therefore, construction of a  
6 solar facility would not affect existing utility lines.

7 Solid waste generated from construction activities may include paper, wood, glass, plastics from  
8 packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous  
9 containers, and vegetation wastes. These wastes would be segregated, where practical, for  
10 recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular  
11 basis by a certified waste handling contractor for disposal at a Class III landfill. Vegetation wastes  
12 generated by site clearing and grubbing would be chipped/mulched and spread onsite or hauled  
13 offsite to an appropriate green waste facility.

14 The closest landfill to the project site that would accept construction/demolition solid waste is the  
15 Mojave-Rosamond Sanitary Landfill. The Mojave-Rosamond Sanitary Landfill is located  
16 approximately 2 miles from the site and is expected to remain in operation through 2123. Given  
17 this timeframe, this landfill is expected to be in operation during the construction period of the  
18 proposed project. Further, with the implementation of Mitigation Measure MM 3.10-2a for the  
19 solar facility portion of the project site and Mitigation Measure MM 3.10-2b for the gen-tie portion  
20 of the project, a recycling coordinator would ensure the separation and proper disposal of recyclable  
21 materials and solid waste in accordance with the California Integrated Waste Management Act  
22 thereby reducing the potential impact of construction activities on utilities in the project vicinity.

23 As described in Chapter 2, *Project Description*, the proposed gen-tie route options would traverse  
24 undeveloped lands as well as existing roadways and developed areas. Therefore, the potential exists  
25 that utility lines might be inadvertently damaged by construction of the gen-tie line. However, the  
26 construction contractor is required by state law to determine the approximate locations of  
27 subsurface utilities prior to opening an excavation. In compliance with this regulation, the  
28 construction contractor would be required to contact USA North at least two working days prior to  
29 initiation of ground-disturbing construction activities. USA North would notify the utility providers  
30 in the vicinity of the planned excavations. Each provider would be responsible for marking the  
31 location of its underground utilities and coordinating with the contractor to avoid damage. In  
32 addition, implementation of Mitigation MM 3.10-1a for the solar facility portion of the project site  
33 and Mitigation Measure MM 3.10-1b for the gen-tie portion of the project, would require advance  
34 coordination with utility providers for protection of subsurface utilities, protection for utilities  
35 during construction, and notification to Fire Departments and utility providers regarding any  
36 damage to utilities. With implementation of this measure, the potential for utility line rupture would  
37 be low. Therefore, implementation of Mitigation Measures MM 3.10-1a and MM 3.10-1b and  
38 Mitigation Measures 3.10-2a, would reduce the potential that construction of the project would  
39 adversely affect existing utilities in the project area.

## 1 **Operation and Maintenance**

2 Water for operation of the solar facility would consist primarily of water consumed by panel  
3 washing processes and small quantities used for dust mitigation. Water is anticipated to be trucked  
4 to the project site for operations, with 30 AFY provided by Mojave Public Utility District. The  
5 developer would be responsible for purchasing and providing water for the project.

6 The total amount of staff required for operation and maintenance of the solar facility is expected to  
7 be up to 10 full-time personnel for operation, maintenance, and security of the solar facility.

8 As described in Chapter 2, *Project Description*, sanitary waste would be handled via onsite septic  
9 systems for services buildings and warehouses. A septic tank and leach field would be constructed  
10 to dispose of sanitary wastewater generated by full-time staff and service personnel. As described  
11 in Section 3.16, *Hydrology and Water Quality*, implementation of a SWPPP would be required  
12 during both construction and decommissioning per Mitigation Measure MM 3.16-1a for the solar  
13 facility portion of the project site and Mitigation Measure MM 3.16-1b for the gen-tie portion of  
14 the project, which would include erosion and sediment control BMPs, such as vegetation  
15 preservation and sandbags, which would prevent the occurrence of erosion or siltation onsite. Non-  
16 stormwater and post-construction BMPs would also be implemented to prevent discharge of  
17 construction-related pollutants (sediment, oil, etc.) that could contaminate nearby drainages.  
18 Stormwater runoff would be collected via an onsite drainage system that has not yet been designed  
19 and panel washdown water would be discharged to grade.

20 SCE provides electrical service to Edwards AFB and southeastern Kern County. The proposed  
21 project would construct a solar facility that would produce more than 100 MW of electricity that  
22 would be delivered to SCE's Windhub substation and/or the privately owned Westwind Substation.  
23 Therefore, the project would not place additional demands on existing electrical infrastructure.  
24 More information and analysis regarding energy demand, consumption, and existing infrastructure  
25 can be found in Chapter 5, *Consequences of Project Implementation*.

26 The project would produce relatively small amounts of waste associated with operation and  
27 maintenance activities. PV solar system wastes typically include broken and rusted metal, defective  
28 or malfunctioning modules, electrical materials, and empty containers and other miscellaneous  
29 solid materials. Most of these materials would be collected and delivered back to the manufacturer  
30 for recycling. Small amounts of typical household refuse would be generated by workers during  
31 operation and maintenance visits. As previously described, the existing landfill has an adequate  
32 capacity, and the recycling of decommissioned materials would further reduce the waste stream.  
33 Post-construction operational solid wastes would be disposed of at the Mojave-Rosamond Landfill.  
34 The Mojave-Rosamond expansion project was approved in 2012, and operational solid waste is  
35 expected to be disposed of at the Mojave-Rosamond Landfill for the duration of the project's  
36 operational lifespan. With the implementation of Mitigation Measure MM 3.10-2a for the solar  
37 facility portion of the project site and Mitigation Measure MM 3.10-2b for the gen-tie portion of  
38 the project, a recycling coordinator would ensure the separation and proper disposal of recyclable  
39 materials and solid waste in accordance with the California Integrated Waste Management Act,  
40 thereby reducing the potential impact of operational activities on utilities in the project vicinity.

1 As described in Section 3.7, *Geology, Minerals, and Soils*, if the proposed septic tank(s) and leach  
2 field(s) would be located on the EUL and would be required to comply with applicable regulations  
3 for the siting and installation of such systems, as enforced by the Air Force. As part of compliance  
4 with Mitigation Measure MM 3.7-2a for the solar facility portion of the project site (see Section  
5 3.7, *Geology, Minerals, and Soils*), the proposed septic systems would be properly sited and  
6 designed such that the septic systems would minimize potential degradation of water quality.  
7 Therefore, the proposed project would not adversely affect sewer or wastewater treatment.

## 8 **Decommissioning**

9 It is assumed that project decommissioning would have similar effects related to infrastructure as  
10 project construction. The decommissioning process may result in larger volumes of waste that  
11 require disposal; however, the recycling coordination required in Mitigation Measure MM 3.10-2a  
12 for the solar facility portion of the project site and Mitigation Measure MM 3.10-2b for the gen-tie  
13 portion of the project, would help reduce solid waste impacts. In addition, implementation of  
14 Mitigation Measure MM 3.11-1a for the solar facility portion of the project and Mitigation Measure  
15 3.11-1b for the gen-tie portion of the project, further discussed in Chapter 3-11, *Land Use*, would  
16 ensure that prior to issuance of any building permit, the project developer provides the Kern County  
17 Planning and Community Development Department with a Decommission Financial Plan for  
18 review and approval to be carried out at a cost to be borne by the project developer. The  
19 Decommission Financial Plan would factor in the cost to remove and dispose of the solar panels  
20 and support structures, replacement of any disturbed soil from removal of support structures, and  
21 control of fugitive dust on the remaining undeveloped land. Therefore, with implementation of  
22 Mitigation Measures MM 3.10-2a, MM 3.10-1b, MM 3.11-1a, and MM 3.11-1b, the potential for  
23 the project's decommissioning to adversely affect existing utilities in the project area would be  
24 reduced to a less-than-significant level.

## 25 **CEQA: Impact Significance Determination**

26 **Impact 3.10-1: The project would exceed wastewater treatment requirements of the**  
27 **applicable regional water quality control board.**

### 28 **Construction**

29 Wastewater generated during construction is expected to be primarily comprised of sanitary waste,  
30 which is typically managed through the utilization of portable toilet facilities and disposed of at an  
31 approved disposal site. Wastewater generated by the proposed project would be handled by the  
32 construction contractor, and would likely be contained within portable toilet facilities that would  
33 be provided, and would be routinely emptied. No sewage or disposal connections to the Edwards  
34 AFB sewer system or a municipal sewer system would be implemented, and impacts would be less  
35 than significant.

### 36 **Operation**

37 Wastewater generated during operation would include sanitary waste, stormwater runoff, and panel  
38 washdown water. As described in Chapter 2, *Project Description*, sanitary waste would be handled  
39 via onsite septic systems for the services buildings and warehouses. Stormwater runoff would be  
40 collected via an onsite drainage system and panel washdown water would be discharged to grade.

1 More specific information regarding the potential impacts of project operation on drainage patterns  
2 is presented in Section 3.17, *Water Resources*.

3 As described in this section and in Section 3.7, *Geology, Minerals and Soils*, any septic tank(s) and  
4 leach field(s) constructed would be required to comply with the Construction Notice to Proceed as  
5 part of the Site Development Lease. The proposed septic system would require implementation of  
6 all required conditions regarding the design and siting of the septic system and leach field as  
7 specified by Air Force requirements. When designed correctly, septic systems would not result in  
8 health impacts, adversely affect natural habitat, or pollute groundwater. Therefore, impacts related  
9 to wastewater treatment would be less than significant.

### 10 **Mitigation Measures**

11 Implement Mitigation Measures MM 3.10-1a and MM 3.10-1b (see Section 3.10.5 for mitigation  
12 measures).

### 13 **Level of Significance after Mitigation**

14 Impacts would be less than significant.

### 15 **Impact 3.10-2: Require or result in the construction of new water or wastewater treatment 16 facilities or expansion of existing facilities, the construction of which could cause significant 17 environmental effects.**

18 As summarized above, the minimal amount of wastewater generated onsite during construction,  
19 operation, and decommissioning would be contained by portable toilets and appropriately disposed  
20 of offsite at a treatment facility. Wastewater generated would include sanitary waste handled via  
21 onsite septic systems, stormwater runoff, and panel washdown water. Specifically, sanitary waste  
22 would be handled via onsite septic systems for the services buildings and warehouses. The project  
23 site would not be connected to any Edwards AFB sewer system, municipal sewer system, or  
24 County-owned wastewater conveyance facilities. Thus, the construction of new or expansion of  
25 existing wastewater treatment facilities would not be required to meet the demands of the proposed  
26 project.

27 It is anticipated that MPUD will provide water for the proposed project through purchase of treated  
28 water from local wholesaler AVEK or through treated groundwater from wells located within  
29 MPUD's service area (both of which may be accessed through the same construction water service  
30 hydrant) and/or untreated groundwater from MPUD's non-potable Well 30. Therefore, impacts  
31 related to construction and operation of water delivery systems would be less than significant.

32 No existing telecommunication facilities are located onsite. During construction, cellular or satellite  
33 communication technology may be used for both internet and telephone systems, which would not  
34 require construction of new telecommunication facilities.

35 The project would require telecommunications facilities to meet the communication requirements  
36 for interconnecting to the power grid and to support project operations during monitoring. Fiber  
37 optic communication lines would follow the electrical collector system. Because construction of  
38 the fiber optic communication lines would follow the electrical collector system and land line

1 systems would also follow the electrical collector system, relocation of telecommunication  
2 facilities would not be required. The construction of new telecommunication facilities would occur  
3 on vacant land. Therefore, impacts would be less than significant.

#### 4 **Mitigation Measures**

5 No mitigation measures would be required.

#### 6 **Level of Significance after Mitigation**

7 Impacts would be less than significant.

8 **Impact 3.10-3: Require or result in the construction of new stormwater drainage facilities or**  
9 **expansion of existing facilities, the construction of which could cause significant**  
10 **environmental effects.**

#### 11 **Construction**

12 The pattern and concentration of runoff could be altered by project activities, such as grading of  
13 the site and roads. However, due to the existing flat topography of the project site, grading and  
14 installation of impervious surfaces for roads, support structures, and the substation are anticipated  
15 to be minimal.

16 As described in Chapter 2, *Project Description*, construction of the proposed project would  
17 commence after the development of a SWPPP that incorporates erosion control, sediment control,  
18 waste management, non-stormwater management, and post-construction BMPs to prevent surface  
19 water quality degradation from construction activities. Site-specific BMPs would be designed by  
20 the developer in compliance with regulations and permit conditions. More specific information  
21 regarding the potential impacts of project construction on drainage patterns can be found in Section  
22 3.16, *Hydrology and Water Quality*.

23 It is not anticipated that the amount of runoff generated on the project site during construction  
24 would be substantially altered; therefore, project construction is not anticipated to result in the need  
25 for new stormwater drainage facilities.

#### 26 **Operation**

27 The proposed project would create a small amount of additional impervious surfaces from the  
28 proposed solar structures, warehouse and administrative buildings, and would require water usage  
29 for panel washing, a small amount for dust mitigation, and to accommodate onsite workers during  
30 operations. Because the site is relatively flat and would continue to be generally covered by  
31 pervious surfaces, runoff generated from the project site during operation is expected to be minimal.  
32 Nevertheless, retention basins are typically constructed onsite to capture the predicted increase in  
33 runoff from the proposed project.

34 Runoff would be released at a location and rate similar to existing conditions. The construction of  
35 retention basins is expected to be of relatively short duration; the retention basins would not  
36 generally be connected to any existing infrastructure and would therefore affect the operation of  
37 any existing infrastructure. Furthermore, in compliance with Mitigation Measure MM 3.10-1a for  
38 the solar facility portion of the project site, and Mitigation Measure MM 3.10-1b for the gen-tie

1 portion of the project, the location of existing utilities would be determined and would be  
2 incorporated into construction specifications to reduce service interruptions during construction of  
3 the project facilities. Environmental effects associated with the construction of possible retention  
4 basins would be less than significant.

#### 5 **Mitigation Measures**

6 Implement Mitigation Measures MM 3.10-1a and MM 3.10-1b (see Section 3.10.5 for mitigation  
7 measures).

#### 8 **Level of Significance after Mitigation**

9 Impacts would be less than significant.

10 **Impact 3.10-4: The project has sufficient water supplies available to serve the project from**  
11 **existing entitlements and resources, and new or expanded entitlement is not needed.**

#### 12 **Construction**

13 It is estimated that up to 200 AFY of water would be required during the 2-year construction period  
14 to support concrete manufacturing, dust control, and sanitation. Edwards AFB would not provide  
15 water for the project. The project developer intends to purchase water for construction, operation,  
16 and decommissioning from the Mojave Public Utility District (MPUD) and truck this water to the  
17 project site. Mojave PUD has provided a will-serve letter verifying there is sufficient water  
18 available to provide the proposed project's construction water supply (Dudek, 2018).

#### 19 **Operation**

20 Operation of the project may potentially use up to 30 AFY of water. Operational decisions  
21 regarding panel washing would be made based upon real-time conditions and there may be years  
22 in which no washing is required. As the water demand would not exceed 75 AFY, the project would  
23 not require preparation of a water supply assessment to determine available water supplies. The  
24 trucked water would be provided by the Mojave Public Utility District (PUD), which obtains its  
25 water supply from the Fremont Valley groundwater basin. The basin is not currently overdrafted,  
26 and the Mojave PUD has provided will-serve letters for operation water demands. Therefore, water  
27 demand during operation would not result in significant impacts to water supply or the expansion  
28 of current entitlements.

#### 29 **Mitigation Measures**

30 No mitigation measures would be required.

#### 31 **Level of Significance after Mitigation**

32 Impacts would be less than significant.

33 **Impact 3.10-5: Be served by a landfill with insufficient permitted capacity to accommodate**  
34 **the project's solid waste disposal needs.**

#### 35 **Construction**

36 As described previously, solid waste generated from construction activities would be segregated,  
37 where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and

1 removed on a regular basis by a certified waste handling contractor for disposal at a Class III  
2 landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and  
3 spread onsite or hauled offsite to an appropriate green waste facility.

4 The closest landfill to the project site that would accept construction/demolition solid waste is the  
5 Mojave-Rosamond Sanitary Landfill. The Mojave-Rosamond Sanitary Landfill is located  
6 approximately 2 miles from the site and is expected to remain in operation through 2123. Given  
7 this timeframe, this landfill is expected to be in operation during the construction period of the  
8 proposed project. With implementation of Mitigation Measure MM 3.10-2a for the solar facility  
9 portion of the project site and Mitigation Measure MM 3.10-2b for the gen-tie portion of the project,  
10 a recycling coordinator would ensure the separation and proper disposal of recyclable materials and  
11 solid waste in accordance with the California Integrated Waste Management Act. Therefore, the  
12 proposed project would not generate a significant amount of solid waste during construction that  
13 would exceed the permitted capacity of the local landfill. Impacts would be less than significant.

#### 14 **Operation**

15 As described above, the project would produce relatively small amounts of waste associated with  
16 operation and maintenance activities. PV solar system wastes typically include broken and rusted  
17 metal, defective or malfunctioning modules, electrical materials, and empty containers and other  
18 miscellaneous solid materials. Most of these materials would be collected and delivered back to the  
19 manufacturer for recycling. Small amounts of typical household refuse would be generated by  
20 workers during operation and maintenance visits. As previously described, the existing landfill has  
21 an adequate capacity, and the recycling of decommissioned materials would further reduce the  
22 waste stream. Post-construction operational solid wastes would be disposed of at the Mojave-  
23 Rosamond Landfill. The Mojave-Rosamond expansion project was approved in 2012, and  
24 operational solid waste is expected to be disposed of at the Mojave-Rosamond Landfill for the  
25 duration of the project's operational lifespan. With the implementation of Mitigation Measure MM  
26 3.10-2a for the solar facility portion of the project site and Mitigation Measure MM 3.10-2b for the  
27 gen-tie portion of the project, a recycling coordinator would ensure the separation and proper  
28 disposal of recyclable materials and solid waste in accordance with the California Integrated Waste  
29 Management Act. Therefore, the proposed project would not generate a significant amount of solid  
30 waste during operation and would not exceed the permitted capacity of the local landfill. Impacts  
31 would be less than significant.

#### 32 **Decommissioning**

33 As discussed in Section 2.6.4, upon completion of the 35-year lease the project developer may seek  
34 to extend the EUL with the Air Force or decommission and remove the system and its components  
35 from the project site. The decommissioning process would result in larger volumes of waste that  
36 require disposal; however, the recycling coordination required in Mitigation Measure MM 3.10-2a  
37 for the solar facility portion of the project site and Mitigation Measure MM 3.10-2b for the gen-tie  
38 portion of the project would help reduce solid waste impacts. In addition, implementation of  
39 Mitigation Measures MM 3.11-1a and MM 3.11-1b, further discussed in Chapter 3-11, *Land Use*,  
40 would ensure that prior to issuance of any building permit, the project developer provides the Kern  
41 County Planning and Community Development Department with a Decommission Financial Plan  
42 for review and approval to be carried out at a cost to be borne by the project developer. The

1 Decommission Financial Plan would factor in the cost to remove and dispose the solar panels and  
2 support structures, replacement of any disturbed soil from removal of support structures, and  
3 control of fugitive dust on the remaining undeveloped land. Therefore, implementation of  
4 Mitigation Measures MM 3.10-2a, MM 3.10-2b, MM 3.11-1a, and MM 3.11-1b would reduce the  
5 potential that decommission of the project would adversely affect existing landfill in the project  
6 area to a less-than-significant level.

#### 7 **Mitigation Measures**

8 Implement Mitigation Measures MM 3.10-2a, MM 3.10-2b (see Section 3.10.5 for mitigation  
9 measures), MM 3.11-1a, and MM 3.11-1b (see Section 3.11.5 for mitigation measures).

#### 10 **Level of Significance after Mitigation**

11 Impacts would be less than significant.

#### 12 **Impact 3.10-6: Fail to comply with federal, state, and local statutes and regulations related to** 13 **solid waste.**

14 The proposed project is expected to generate solid waste during construction and operation. The  
15 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain  
16 specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access  
17 Act of 1991, as amended, requires expanded or new development projects to incorporate storage  
18 areas for recycling bins into the proposed project design. The proposed project would be required  
19 to comply with all federal, state, and local statutes and regulations related to the handling and  
20 disposal of solid waste. Therefore, implementation of the proposed project would result in less-  
21 than-significant impacts.

#### 22 **Mitigation Measures**

23 No mitigation measures would be required.

#### 24 **Level of Significance after Mitigation**

25 Impacts would be less than significant.

### 26 **3.10.3.2 Alternative B: 1,500-Acre EUL**

#### 27 ***NEPA: Environmental Impacts***

##### 28 **Construction**

29 Because of the reduced scale of Alternative B, less water would be used, less wastewater and less  
30 solid waste would be generated during construction. Impacts related to water, wastewater, and solid  
31 waste infrastructure would be reduced compared to Alternative A. Alternative B would utilize the  
32 same gen-tie line route proposed in Alternative A; therefore, impacts related to disruption of  
33 existing utilities would be similar to Alternative A.

##### 34 **Operation and Maintenance**

35 Alternative B would result in the same effects to electricity and communications infrastructure as  
36 described for Alternative A, however, because of the reduced size of this alternative, effects related  
37 to water supply and generation of wastewater and solid waste would be reduced.

**1 Decommissioning**

2 As described previously under Construction, Alternative B would use less water and would  
3 generate less solid waste as well as wastewater during decommissioning activities and impacts  
4 related to water and wastewater infrastructure would be reduced compared to Alternative A.

**5 CEQA: Impact Significance Determination**

6 Because Alternative B would result in approximately one-third of the physical development of  
7 Alternative A, it is likely that this alternative would require less water and would generate less  
8 stormwater runoff, wastewater and solid waste during construction and operation. Therefore,  
9 Alternative B would result in fewer impacts compared to Alternative A. Impacts concerning  
10 compliance with wastewater treatment requirements, construction of wastewater and stormwater  
11 facilities, expansion of water supply entitlements, and disposal of solid waste would be less than  
12 significant with mitigation incorporated.

**13 Mitigation Measures**

14 Implement Mitigation Measures MM 3.10-1a, MM 3.10-1b, MM 3.10-2a, and MM 3.10-2b (see  
15 Section 3.10.5 for mitigation measures).

**16 Level of Significance after Mitigation**

17 Impacts would be less than significant.

**18 3.10.3.3 Alternative C: No Action/No Project****19 NEPA: Environmental Impacts**

20 Under this alternative, none of the components proposed under Alternative A would be built. If  
21 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
22 environmental setting as described previously. Therefore, there would be no need for new or  
23 expanded water supplies, and no generation of wastewater and no potential to affect existing  
24 utilities in the project area. Alternative C would result in no impacts regarding infrastructure.

**25 CEQA: Impact Significance Determination**

26 Under this alternative, none of the components proposed under Alternative A would be built. If  
27 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
28 environmental setting as described previously. Therefore, there would be no need for new or  
29 expanded water supplies, and no generation of wastewater or solid waste. Alternative C would  
30 result in no impacts concerning compliance with wastewater treatment requirements, construction  
31 of wastewater and stormwater facilities, expansion of water supply entitlements and disposal of  
32 solid waste.

**33 Mitigation Measures**

34 No mitigation measures are required.

**35 Level of Significance after Mitigation**

36 No Impact.

## 1 3.10.4 Cumulative Impact Analysis

### 2 3.10.4.1 NEPA: Cumulative Environmental Effects and Their 3 Significance

4 As described in Section 3.0, *Environmental Analysis*, and as shown in Table 3-1, “Cumulative  
5 Project List,” 90 projects are proposed within Kern County, the city of Lancaster, the city of  
6 Palmdale, and unincorporated areas of Los Angeles in the vicinity of the project site. Fifty-four of  
7 these projects are solar projects. In addition, other related projects in the surrounding areas have  
8 been: (1) submitted for plan processing; (2) approved; and/or (3) engaged in active construction  
9 programs.

10 Impacts of the proposed project could be cumulatively considerable if they would have the potential  
11 to combine with similar impacts of other recent, present, or proposed projects to result in a  
12 significant cumulative effect. Similar to other solar projects, the proposed project would have a  
13 relatively high water demand during construction (estimated to be up to 400 acre-feet over a 2-year  
14 period). During operation, the proposed project is expected to have a substantially lower water  
15 demand of up to 40 AFY. Because of the area’s remoteness and its limited available surface water  
16 resources, water supplies for other projects (especially remote renewable energy projects) are  
17 expected to be trucked in or obtained from wells onsite. Residential or commercial services, which  
18 are more water intensive uses, may connect to existing water suppliers. Significant cumulative  
19 impacts to utility systems would occur if the cumulative projects would overburden public service  
20 agencies and if utility providers were unable to provide adequate services. Some cumulative  
21 projects, including some of the 54 solar projects, have the potential to lower water demand if they  
22 replace more water-intensive uses such as agriculture. Prior to project approval, public agencies  
23 and utilities are given the opportunity to respond to an inquiry for information regarding potential  
24 increase in demand on their services. In accordance with California Water Code Section 10912 and  
25 Senate Bill 267, any renewable energy project with a water demand greater than 75 AFY would be  
26 required to prepare a water supply assessment to determine whether the water provider has enough  
27 supplies to support the project throughout its lifetime. Per Senate Bills 610 and 221, these water  
28 supply assessments would occur early in the land use planning process for all large-scale  
29 development projects. A water supply assessment is also required for commercial or residential  
30 developments meeting certain requirements. As noted in the Kern County General Plan,  
31 development fees are assessed on a project-specific basis to mitigate for the development-related  
32 increase in demand on public services and utilities.

33 As would most solar projects, the proposed project would generate a minimal volume of  
34 wastewater. The majority of projects within the vicinity of the project site are solar and wind energy  
35 projects that (similar to the proposed project) would not likely generate substantial volumes of  
36 wastewater. These projects would likely be served by portable toilet facilities provided by a  
37 County-registered and permitted portable toilet and waste disposal business that would dispose of  
38 wastewater at a municipal wastewater treatment facility (with which they have already secured a  
39 “will-serve” agreement). Any projects requiring septic systems would be required to comply with  
40 State and County requirements pertaining to septic system design, siting, and maintenance. For  
41 projects requiring wastewater treatment with the ability to hook in to a wastewater treatment

1 provider (mainly residential and commercial projects), wastewater utilities would be given the  
2 opportunity to respond to an inquiry for information regarding potential increase in demand on their  
3 services and to provide a confirmation of capacity to treat the proposed new volume of wastewater.  
4 The projects would be subject to payment of compensatory fees for any required infrastructure  
5 improvements associated with required utility connections. Therefore, the proposed project would  
6 not have the potential to combine with impacts from past, present, or reasonably foreseeable  
7 projects to result in a cumulative impact to wastewater treatment or infrastructure.

8 The proposed project is not expected to generate a substantial amount of stormwater runoff or to  
9 drain into an existing stormwater drainage system; existing onsite drainage patterns would be  
10 maintained to the maximum extent feasible through the avoidance of existing floodways as  
11 determined by the Drainage Plan (Mitigation Measure MM 3.16-3a for the solar facility portion of  
12 the project site and Mitigation Measure MM 3.16-3b for the gen-tie portion of the project). Any  
13 necessary drainage mitigation features, such as retention basins, that would capture any substantial  
14 predicted increase in runoff would be designed in compliance with the County Development  
15 Standards. In accordance with state requirements, the proposed project would also implement  
16 Mitigation Measure MM 3.10-1a for the solar facility portion of the project site and Mitigation  
17 Measure MM 3.10-1b for the gen-tie portion of the project, to ensure avoidance of utilities and  
18 potential utility service interruptions that could occur during project construction. The other 35  
19 proposed solar projects in Kern County would also not likely generate substantial stormwater runoff  
20 nor connect to existing stormwater drainage systems. The other projects listed in Table 3-1 would  
21 be required to comply with state regulations requiring coordination with other service utility  
22 providers to avoid disruption of utility services caused by the project. All projects would be  
23 expected to implement BMPs (either through a SWPPP or other regulations), comply with their  
24 respective permit conditions, and properly install systems to manage stormwater runoff so that  
25 impacts would be less than significant. As there is no established downstream hydrological  
26 connection, runoff from the proposed project is not expected to combine with stormwater runoff  
27 from any other projects. Therefore, the proposed project would not have the potential to combine  
28 with impacts from past, present, or reasonably foreseeable projects to result in a cumulative impact  
29 to stormwater runoff.

30 The proposed project would generate a minimal amount of waste during construction and operation.  
31 Decommissioning of the proposed project may generate more waste; however, as part of Mitigation  
32 Measures MM 3.10-2a and MM 3.10-2b, recycling programs would be implemented for recycling  
33 of facility components during the project's construction, operation, and decommission.  
34 Furthermore, Mitigation Measures MM 3.11-1a and MM 3.11-1b would ensure the cost to remove  
35 and dispose of the project solid waste is accounted for in a Decommission Financial Plan that is  
36 reviewed and approved by Kern County prior to issuance of building permits. The proposed project  
37 is therefore not expected to significantly impact Kern County landfills. However, generation of  
38 waste from cumulative projects, including residential and commercial developments, and the  
39 decommissioning of other solar projects could result in a potentially significant cumulative impact.  
40 There are multiple active landfills within the area with large remaining capacities; recycling  
41 programs would be implemented for all projects in accordance with applicable state and local waste  
42 reduction regulations. Furthermore, similar to the proposed project, the projects surrounding the  
43 project area are typically required to complete a Decommission Financial Plan that accounts for the

1 costs of solid waste management prior to issuance of any building permits by Kern County.  
2 Therefore, the proposed project would not be expected to combine with impacts from past, present,  
3 or reasonably foreseeable projects to result in a cumulative impact to landfills.

4 In conclusion, the proposed project would be self-contained and would not result in significant  
5 impacts on infrastructure with implementation of Mitigation Measures MM 3.10-1a, MM 3.10-1b,  
6 MM 3.10-2a, MM 3.10-2b, MM 3.11-1a, MM 3.11-1b, MM 3.16-3a, and MM 3.16-3b.

#### 7 **3.10.4.2 CEQA: Cumulative Impact Significance Determination**

8 With implementation of Mitigation Measures MM 3.10-1a, MM 3.10-1b, MM 3.10-2a, MM 3.10-  
9 2b, MM 3.11-1a, MM 3.11-1b, MM 3.16-3a, and MM 3.16-3b., the proposed project would not be  
10 expected to combine with impacts from past, present, or reasonably foreseeable projects to result  
11 in a significant cumulative impact involving wastewater treatment, infrastructure, stormwater  
12 runoff, or landfills.

#### 13 **Mitigation Measures**

14 Implement Mitigation Measures MM 3.10-1a, MM 3.10-1b, MM 3.10-2a, MM 3.10-2b, MM 3.11-  
15 1a, MM 3.11-1b, MM 3.16-3a, and MM 3.16-3b (see Sections 3.10.5, 3.11.5 and 3.16.5 for  
16 mitigation measures).

#### 17 **Level of Significance after Mitigation**

18 Cumulative impacts would be less than significant.

### 19 **3.10.5 Mitigation Measures**

#### 20 **3.10.5.1 Solar Facility Mitigation Measures**

21 **MM 3.10-1a: Coordinate with Utility Service Providers.** Prior to construction, the developer  
22 shall coordinate with appropriate utility service providers and related agencies to determine the  
23 location of utilities and ensure that adequate wastewater treatments exist. The developer will also  
24 incorporate into construction specifications the requirement that the contractor develop a plan to  
25 reduce service interruptions. The plan shall be approved by the Air Force and submitted to  
26 appropriate utility providers. Utilities to be addressed in the plan shall include, but may not be  
27 limited to: water, recycled water, sewer, gas, electricity, telephone, and cable.

28 **MM 3.10-2a: Recycling Coordinator.** During construction, operation, and decommissioning,  
29 debris and waste generated shall be recycled to the extent feasible.

- 30 1. An onsite Recycling Coordinator shall be designated by the project proponent to facilitate  
31 recycling as part of the Maintenance, Recycling, and Trash Abatement and Pest  
32 Management Program.
- 33 2. The Recycling Coordinator shall facilitate recycling of all construction waste through  
34 coordination with contractors, local waste haulers, and/or other facilities that recycle  
35 construction/demolition wastes.
- 36 3. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring  
37 special disposal are handled according to state and county regulations that are in effect at  
38 the time of disposal.

- 1           4. Contact information of the coordinator shall be provided to Kern County prior to issuance  
2           of building permits.

### 3   **3.10.5.2 Gen-tie Mitigation Measures**

4   **MM 3.10-1b: Coordinate with Utility Service Providers.** Prior to construction of generation tie-  
5 lines, the developer shall coordinate with appropriate utility service providers and related agencies  
6 to determine the location of utilities and ensure that adequate wastewater treatments exist. The  
7 developer will also incorporate into construction specifications the requirement that the contractor  
8 develop a plan to reduce service interruptions. The plan shall be approved by Kern County and  
9 submitted to appropriate utility providers. Utilities to be addressed in the plan shall include, but  
10 may not be limited to: water, recycled water, sewer, gas, electricity, telephone, cable.

11 **MM 3.10-2b: Recycling Coordinator.** During construction, operation, and decommissioning,  
12 debris and waste generated shall be recycled to the extent feasible.

- 13           1. An onsite Recycling Coordinator shall be designated by the project proponent to facilitate  
14 recycling as part of the Maintenance, Trash Abatement and Pest Management Program.
- 15           2. The Recycling Coordinator shall facilitate recycling of all generation tie-line construction  
16 waste through coordination with contractors, local waste haulers, and/or other facilities that  
17 recycle construction/demolition wastes.
- 18           3. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring  
19 special disposal are handled according to state and county regulations that are in effect at  
20 the time of disposal.
- 21           4. Contact information of the coordinator shall be provided to the Kern County Planning and  
22 Natural Resources Department prior to issuance of building permits.

### 23 **3.10.6 Residual Impacts after Mitigation**

24 Mitigation Measures MM 3.10-1a for the solar facility portion of the project site and MM 3.10-1b  
25 for the gen-tie portion of the project, would determine the locations of exiting utilities through  
26 coordination with utility service providers and implement these locations into construction plans to  
27 avoid the potential for damage to occur to them during project construction. Mitigation Measure  
28 MM 3.10-2a for the solar facility portion of the project site, and Mitigation Measure MM 3.10-2b  
29 for the gen-tie portion of the project, would require waste generated by the project during  
30 construction and operation to be recycled to the extent feasible. Mitigation Measure MM 3.7-2a for  
31 the solar facility portion of the project would require compliance with state and county septic  
32 system standards. The proposed septic systems would be located an acceptable distance away from  
33 the high water marks of drainages onsite. Proper siting and design of the septic systems, as well as  
34 regular maintenance would minimize potential degradation of water quality. Mitigation measures  
35 would reduce impacts to infrastructure to less-than-significant levels. Implementation of the  
36 proposed project would not result in adverse impacts under NEPA. Residual impacts from the  
37 project to infrastructure after the implementation of mitigation are not expected to occur.



## 3.11 Land Use

### 3.11.1 Affected Environment

This EIS/EIR section describes the affected environment for land use in the proposed project area, including the regulatory and environmental settings. The following discussion addresses existing environmental conditions in the affected environment, evaluates the project's consistency with applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project construction and operation.

#### 3.11.1.1 Scoping Issues Addressed

The following comments related to land use were provided during scoping.

The U.S. Bureau of Land Management (BLM) provided the following comment:

- Consultation with BLM requested for the following locations:
  1. T. 11N., R. 32W. Sec. 32. SW1/4
  2. T. 10N., R. 11W. Sec. 10. NW1/4

The Initial Study/Notice of Preparation (NOP) presented three north-south transmission line options. The third option (North-South-Gen-Tie Route Option 3 as shown in Figure 2 of Initial Study/NOP) crossed parcels under BLM jurisdiction; however, the developer has since withdrawn option three. Therefore, the proposed project being analyzed in this EIS/EIR does not cross or affect any land administered by the BLM.

The Mojave Chamber of Commerce provided the following comment:

- The EIS/EIR should consider the potential project impacts for future development in Mojave when analyzing gen-tie route options.

An analysis of the proposed project's consistency with applicable Kern County General Plan and Specific Plan policies and objectives is provided in **Table 3.11-3**.

#### 3.11.1.2 Regulatory Framework

Applicable goals, policies, and implementation measures for each resource analyzed have been identified in their respective Regulatory Setting section in Sections 3.1 through 3.16 of this EIR. This section lists all applicable goals, objectives, policies, and implementation measures adopted for the purpose of avoiding or mitigating an environmental effect not previously identified in the above-referenced chapter as they relate to land use planning and the project.

#### ***Federal***

The Federal Aviation Administration (FAA) issues and enforces regulations related to air traffic control and the assignment and use of airspace. The FAA's regulations are found in the Federal Aviation Regulations (FAR). FAR Title 14, Part 77, establishes the standards for determining obstructions in navigable airspace, including height limitations on structures taller than 200 feet or within 20,000 feet (approximately 3.8 miles) of an airport.

## 3.11 Land Use

1 The Edwards AFB Installation Development Plan (IDP) provides guidance for planning decisions  
2 regarding general land use growth patterns and site-specific development affecting the base. The  
3 Edwards AFB IDP describes the factors affecting interactions with surrounding lands, the capacity  
4 to accommodate development, and plans for the future of the base.

**5 State****6 The California State Lands Commission**

7 The California State Lands Commission's participation in the Desert Renewable Energy  
8 Conservation Plan (DRECP) and school land consolidation effort anticipates identifying renewable  
9 energy development opportunities and using the DRECP to prepare tiered CEQA and NEPA  
10 analysis for specific land exchange transactions and renewable energy projects on Commission  
11 land.

12 During project-specific review and approval, the Commission may be a lead or responsible agency  
13 under CEQA due to its authority to require a lease or permit for covered renewable energy project  
14 proposals that may be developed on school lands or sovereign lands. For this EIS/EIR, the  
15 Commission is not the responsible agency.

**16 I. 1. 4. State Objectives**

17 The California Energy Commission (CEC), California Department of Fish and Wildlife (CDFW),  
18 and the Commission identified three primary objectives the state must meet to achieve the  
19 fundamental purpose of the DRECP:

20 Objective 1: Reduce the biological and other environmental impacts of future utility-scale  
21 renewable energy developments in the Plan Area by designating appropriate areas  
22 for renewable energy development within the context of a landscape-scale  
23 conservation plan that are sufficient to accommodate the foreseeable demand for  
24 renewable energy in the DRECP through 2040.

25 Objective 2: Contribute to California's Renewables Portfolio Standard and the state's  
26 greenhouse gas reduction mandates and goals by planning for approximately  
27 20,000 MWs of renewable energy generation and associated transmission capacity  
28 in the Plan Area by 2040, including obtaining state and federal incidental take  
29 authorizations with regulatory assurances needed for covered renewable energy  
30 and transmission projects.

31 Objective 3: Provide for the long-term conservation and management of Covered Species  
32 within the Plan Area and preserve, restore, and enhance natural communities and  
33 ecosystems in which those species are found by focusing renewable energy  
34 development away from areas of greatest biological importance or sensitivity;  
35 coordinating and standardizing biological avoidance, minimization, mitigation,  
36 compensation, conservation, and management requirements for Covered Activities  
37 within the Plan Area; and taking other actions to meet conservation planning  
38 requirements in state and federal law.

**39 West Mojave Plan Habitat Conservation Plan**

1 The West Mojave Habitat Conservation Plan (WMHCP) is a comprehensive environmental  
2 analysis of seven alternatives that address compliance with the federal and California endangered  
3 species acts (FESA and CESA, respectively). The primary purpose of the plan is to develop  
4 management strategies for the desert tortoise, Mohave ground squirrel and over 100 other sensitive  
5 plants and animals that would conserve those species throughout the western Mojave Desert while  
6 simultaneously establishing a streamlined program for compliance with the regulatory  
7 requirements of FESA and CESA. The 9,359,070-acre planning area is located to the north of the  
8 Los Angeles metropolitan area, including 3,263,874 acres of BLM-administered lands, 3,029,230  
9 acres of private lands and 102,168 acres of lands administered by the State of California. The plan  
10 establishes goals and standards for the conservation of sensitive species and streamlining  
11 Endangered Species Act permitting (BLM, 2005).

## 12 **Local**

13 Included in the Kern County General Plan is a Land Use Element, which designates the general  
14 distribution, location, and extent of desired land uses, including housing, business, industry, open  
15 space, education, public buildings and grounds, waste disposal facilities, and other categories of  
16 public and private uses; a Conservation Element, which addresses the conservation, development,  
17 and use of natural resources, including water, forests, soils, rivers, and mineral deposits; and an  
18 Open Space Element, which details measures for preserving open space for natural resources,  
19 outdoor recreation, public health, and safety. In addition to the Land Use, Open Space, and  
20 Conservation Elements, the Kern County General Plan includes other elements related to  
21 circulation, noise, safety, energy, and military readiness.

22 The Public Facilities and Services Element ensures that new developments pay their share of the  
23 costs required to meet public services needs and that utility developers are involved in the land use  
24 and zoning review process.

25 The Resource Element requires that the County support programs and policies that provide  
26 economic incentives to ensure the long-term retention of resource lands and to provide for the  
27 orderly expansion of new urban-scale infrastructure and development. The General Provisions  
28 Element contains several regulatory categories. The Archaeological, Paleontological, Cultural, and  
29 Historical Preservation sections require that the County promote the preservation of cultural and  
30 historic resources that constitute a heritage value to residents and visitors. The Threatened and  
31 Endangered Species section requires that the County work closely with state and federal agencies  
32 to ensure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical  
33 resources. The Surface Water and Groundwater section requires projects to analyze watershed  
34 impacts and mitigate for construction-related impacts. The Circulation Element requires that the  
35 County prevent encroachment on public airport and military base operations from incompatible  
36 land uses.

37 The Noise Element requires that discretionary industrial, commercial, or other noise-generating  
38 land use projects are reviewed for compatibility with nearby noise-sensitive land uses.

39 The Energy Element requires that the County permit solar energy development in the desert and  
40 valley planning regions that does not pose significant environmental or public health and safety

3.11 Land Use

1 hazards, and that the County review all proposed transmission lines and their alignments for  
2 conformity with the Land Use, Conservation, and Open Space Elements of the General Plan. Each  
3 Kern County General Plan element establishes goals, policies, and implementation measures that  
4 guide the planning decisions in unincorporated Kern County.

5 The Mojave Specific Plan was prepared to guide development within and surrounding the Mojave  
6 community until 2043. The Mojave Specific Plan states goals, objectives, policies, and  
7 implementation measures to accommodate growth while protecting the community's unique  
8 business, transportation, and environmental resources. The Land Use Element of the Mojave  
9 Specific Plan includes policies and objectives to ensure that a balanced land use pattern is used to  
10 ensure that future growth provides a range of residential, employment, service, and recreational  
11 opportunities. The Conservation, Circulation, Noise, and Seismic and Safety Elements provide  
12 additional goals and policies applicable to Land Use in the project area.

13 The South of Mojave Elephant Butte Specific Plan establishes recommendations and  
14 implementation measures addressing housing, business, industry, open space, recreation,  
15 circulation, and other land uses within the plan area. These recommendations and implementation  
16 measures include natural resource, scenic, and hazard land use policies.

17 The West Edwards Road Settlement Specific Plan contains recommendations and implementation  
18 measures addressing Land Use, Open Space and Conservation, Public Facilities and Services, and  
19 Resources.

20 The Willow Springs Specific Plan contains performance standards to supplement the zoning and  
21 land use map contained in the Kern County General Plan which specifies land use entitlements, as  
22 well as contains standards to guide the Specific Plan's implementation and to assist the legislative  
23 body in making decisions concerning issues in the community. The Specific Plan's goals, policies,  
24 and standards are compatible with those outlined in the Kern County General Plan, but are tailored  
25 to the particular needs of the Willow Springs planning area.

26 The Actis Interim Rural Community Plan has not yet been adopted for the community of Actis.  
27 The Actis Interim Rural Community Plan Map is in effect until a formal Specific Plan can be  
28 adopted for the community. Therefore, no formal plan has yet been adopted and the goals and  
29 policies of the Kern County General Plan shall be the governing tool for any development for  
30 portions of the project that pass through this area.

31 Title 19 of the Kern County Ordinance provides a description of permitted uses for the various  
32 zoning classifications within the County. The Zoning Ordinance explains the purpose of the district,  
33 specifies permitted and conditional uses, and establishes development and performance standards.  
34 In addition, Section 19.08.160 of the Kern County Zoning Ordinance establishes review  
35 requirements for the height of structures located within a military review zone as defined in Figure  
36 19.08.160 of the Kern County Zoning Ordinance.

37 The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and  
38 criteria by which the County can address compatibility issues when making planning decisions  
39 concerning airports and military aviation operations. The proposed solar facility would be located

1 on Edwards AFB, which is a military aviation installation identified in the ALUCP. The proposed  
2 gen-tie line would be constructed within 1.5 miles of the Mojave Air and Space Port, which is also  
3 identified in the ALUCP.

4 The Regional Transportation Plan (RTP) for Kern County identifies future transportation  
5 improvements needed to serve the projected transportation needs of the County. The RTP details  
6 the existing transportation systems; sets goals, policies, and projects; and identifies funding  
7 mechanisms for these projects.

8 The Kern County Integrated Waste Management Plan is a comprehensive guide for all solid waste  
9 management activities in the County. Refer to EIS/EIR Section 3.10, *Infrastructure*, for a more  
10 detailed description of the plan.

### 11 **3.11.1.3 Environmental Setting**

12 This section of the EIS/EIR describes the existing physical environmental conditions in the vicinity  
13 of the project as they relate to the potential land use impacts of the proposed project.

#### 14 ***Regional Setting***

15 The project region could generally be characterized as rural desert land. Land uses in the project  
16 region include a mix of vacant land, agriculture, low-density, single-family residential uses,  
17 recreational and public facilities, and nature preserves. Urban development is concentrated in  
18 Rosamond and Mojave. Renewable energy generation is a significant and growing land use in the  
19 desert region, with tens of thousands of acres of wind and solar power plants currently operating,  
20 under construction, or planned in the project region.

#### 21 ***Local Setting***

22 The proposed solar facility lies within an undeveloped area of Edwards AFB. The site is covered  
23 with low-lying desert vegetation and is generally flat, with a few dirt roads traversing the site. The  
24 perimeter of the project site is partially surrounded by a chain-link barbed-wire fence along Lone  
25 Butte Road and Trotter Avenue. There are power lines along Division Street, which runs north-  
26 south through the western portion of the project site. There are also power lines located along  
27 Trotter Avenue, which turns at a slight diagonal to the southeast and through the eastern portion of  
28 the project site.

29 The proposed gen-tie line options traverse mostly vacant land covered with sparse, low-lying desert  
30 vegetation. There are currently no active agricultural land uses within or surrounding the proposed  
31 gen-tie routes. Additionally, the gen-tie lines would follow all roadway rights-of-way.

32 The majority of the proposed gen-tie line Option 1 would be constructed on land zoned by Kern  
33 County as Limited Agriculture (A-1) or Exclusive Agriculture (A). The proposed gen-tie line Option  
34 2 would be constructed on land zoned by Kern County as Limited Agriculture (A-1), Exclusive  
35 Agriculture (A), Heavy Industrial (M-3), Medium Industrial (M-2), and Estate (E). Proposed Options  
36 A and B, for the east-west gen-tie lines, would primarily be constructed on land zoned by Kern County  
37 as Limited Agriculture (A-1) and Exclusive Agriculture (A).

## 3.11 Land Use

1 Otherwise, there are no existing structures, paved drives, lighting, or other improvements on the  
2 site. There are no natural or man-made water features on the project site. There are ephemeral  
3 playas on the project site that are temporarily inundated with water, but these are not considered  
4 water features.

**5 Land Ownership and Proprietary Jurisdiction**

6 The proposed solar facility would be located on land owned by the United States Air Force and is  
7 therefore subject to guidance and zoning contained in the Edwards AFB IDP. The proposed gen-  
8 tie line would run across publicly and privately owned property in unincorporated Kern County.  
9 Kern County General Plan and Specific Plan designations and Kern County Zoning would apply  
10 to these lands.

**11 Edwards AFB Land Use Designations**

12 The proposed solar facility area has a land use designation of Research and Development and a  
13 zoning classification of Range Zone per the Edwards AFB IDP. The Research and Development  
14 land use designation is assigned to areas used in basic or applied research in science, medicine, and  
15 engineering, including structures and facilities used in the design, development, and testing of  
16 prototypes and processes and space and aeronautics research and development. The Range Zone  
17 classification includes a variety of activities and uses such as active range, aircraft testing, security  
18 forces, landfill, borrow pits, rod and gun club, proficiency firing range, and military training uses.  
19 The Range Zone also includes infrastructure-related uses such as water production, wastewater  
20 facilities, fuel delivery and lakebed runways. Future uses planned for within the Range Zone  
21 include continued development of existing activities as well as development of solar power  
22 facilities and other leased uses. The proposed solar facility area is predominantly used for aircraft  
23 test ranges and maintained and unmaintained landing sites.

24 As discussed in Section 1.2 of this EIS/EIR, this land is part of the Air Force’s Enhanced Use Lease  
25 (EUL) Program. The EUL Program allows the Air Force to lease underutilized, non-excess lands  
26 to a third party that would generate monetary or in-kind consideration to the Air Force while also  
27 optimizing the value and utility of these lands under authority granted by 10 United States Code  
28 Section 2667.

**29 Kern County General Plan Land Use and Zoning Classifications**

30 Although the proposed solar facility would be located on land owned by the Air Force and is subject  
31 to guidance and zoning contained in the Edwards AFB IDP, the project site would also be subject  
32 to Kern County General Plan designations and Kern County Zoning apply to this land. The County  
33 General Plan designation for the project site is “State or Federal Land” and is zoned “limited  
34 agriculture.” No Kern County Specific Plans apply to the solar facility site. The General Plan land  
35 use designations and zoning districts abutting the solar facility project site are summarized in **Table**  
36 **3.11-1** and shown in **Figures 3.11-1** through **3.11-12**.

37 Lands within the proposed route options for the gen-tie line are subject to the Kern County General  
38 Plan, Mojave Specific Plan, South of Mojave-Elephant Butte Specific Plan, West Edwards Road  
39 Settlement Specific Plan, and Kern County Zoning Ordinance. The potential gen-tie route options  
40 under consideration traverse largely undeveloped lands that have been assigned a broad variety of

1 land use designations and zoning classifications by Kern County. The majority of the route options  
2 traverse lands designated for agricultural purposes, and the “limited agriculture” zoning  
3 classification abuts most of the proposed route option segments. A significant portion of the route  
4 options traverse lands designated as “wind energy combining zones.” Generally, lands located  
5 north of Purdy Avenue and east of 40th Street West are designated for a variety of residential,  
6 commercial, and industrial land uses. The site of the Windhub Substation is designated for Heavy  
7 Industrial use in both the Kern County General Plan and Zoning Ordinance (Title 19 of the Kern  
8 County Code). Kern County land use and zoning designations for lands within the route options  
9 for the proposed gen-tie line are shown in **Table 3.11-2**.

## 10 **Surrounding Land Uses**

### 11 **Solar Facility**

12 To the north, the solar facility site borders approximately 30 existing residences along Trotter  
13 Avenue. These rural residences occupy lands designated for Limited Agriculture (Zone A-1) and  
14 Estate (E) uses by the Kern County Zoning Ordinance. General Plan land use designations for lands  
15 north of the project site are dictated by the West Edwards Road Settlement Specific Plan and the  
16 Kern County General Plan listed in Table 3-11.2, *Land Use Designations Surrounding the Solar*  
17 *Facility Area*. The lands abutting the project site to the east and south are undeveloped and lie  
18 within the perimeter of Edwards AFB. To the west, the project site borders scattered single-family  
19 homes and industrial uses. General Plan land use designations for lands west of the site are dictated  
20 by the Kern County General Plan (until the Actis Interim Rural Community Plan is adopted as  
21 stated in Section 3.11.1.2 above).

### 22 **Gen-Tie Line**

23 As described above, the route options for the gen-tie line traverse largely undeveloped lands that  
24 have been assigned a broad variety of land use designations and zoning classifications by Kern  
25 County, as Table 3-11.2. Areas adjacent to the proposed route options contain a variety of land uses  
26 including existing roads, wind energy generating facilities, a historic railroad, modern transmission  
27 lines, existing residences, agriculture and industrial uses (ECORP, 2013).

**TABLE 3.11-1**  
**LAND USE DESIGNATIONS SURROUNDING THE SOLAR FACILITY AREA**

Location in Relation to the Project Site	Summary of General Plan Land Use Designations	Summary of Surrounding Zoning Designations
North	<p><b>Map Code 4.1 (Accepted County Plan Areas [Mojave])</b> - The Mojave Priority Area Map identifies the lands immediately north of the site as the West Edwards Road Settlement.</p> <p><b>Map Code 8.5 (Resource Management)</b> - Primarily open-space lands 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.</p> <p><b>Map Code 6.2 (General Commercial)</b> - Retail and service facilities of less intensity than regional centers providing a broad range of goods and services which serve the day-to-day needs of nearby residents.</p> <p><b>Map Code 5.6 (Residential - Minimum 2.5 Gross Acres/Unit)</b> - This constitutes a single-family designation with rural service needs in the valley and desert regions, while in the mountain region residential uses of this density will require urban service provision.</p> <p><b>Map Code 5.7 (5.0 Gross Acres/Dwelling Unit Maximum)</b> - Designated in the outlying, less densely settled areas, often characterized with physical constraints and not requiring connections to public water and sewer infrastructure.</p> <p><b>Map Code 7.2 (Service Industrial)</b> – Commercial or industrial activities which involve outdoor storage or use of heavy equipment. Such uses produce significant air or noise pollution and are visually obtrusive. Uses shall include, but are not limited to: automobile and truck parking, storage and repair shops, freighting or trucking yards, bottling plants, breweries, welding shops, cleaning plants, and other manufacturing and processing activities.</p> <p><b>Map Code 8.5/2.5 (Resource Management/Flood Hazard)</b> – See above for summary of Map Code 8.5. Map Code 2.5 (Flood Hazard) – Special Flood Hazard Areas (Zone A), as identified on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency (FEMA) and supplemented by floodplain delineating maps that have been approved by the Kern County Engineering and Survey Services Department.</p> <p><b>Map Code 1.1 (State and Federal Land)</b> - Applied to all property under the ownership and control of the various state and federal agencies operating in</p>	<p><b>Limited Agriculture (A-1)</b> - Designates 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.</p> <p><b>Estate (E 10)</b> - Designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be ten (10) acres.</p> <p><b>Estate (E 2 1/2)</b> - Designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be two and one-half (2 1/2) acres.</p> <p><b>Residential Suburban (RS)</b> - This combining district expands the number and type of permitted domestic agricultural uses within rural residential areas. The uses allowed and regulations established by the RS District are in addition to regulations of the base district with which the RS District is combined.</p> <p><b>Mobile Home (MH)</b> - This combining district provides for the installation of mobile homes with or without foundations in agricultural, resource-related, and residential zoned areas. The uses allowed and regulations established by the MH District are normally in addition to the regulations of the base district with which the MH District is combined.</p> <p><b>General Commercial (C-2)</b> - Designates areas for the widest range of retail commercial activities, including regional shopping centers and heavy commercial uses. The C-2 District may also be combined with the Cluster (CL) Combining District to achieve innovative, creative office or commercial development.</p> <p><b>Precise Development Combining (PD)</b> - Designates areas with unique site characteristics or environmental conditions or areas surrounded by sensitive land uses to ensure that development in such areas is compatible with such constraints.</p>

**TABLE 3.11-1  
LAND USE DESIGNATIONS SURROUNDING THE SOLAR FACILITY AREA**

Location in Relation to the Project Site	Summary of General Plan Land Use Designations	Summary of Surrounding Zoning Designations
	<p>Kern County (military, U.S. Forest Service, Bureau of Land Management, Department of Energy, etc.).</p> <p><b>Map Code 3.4 (Solid Waste Disposal Facility)</b> - Existing or planned public, semi-public, or private municipal solid waste facilities, organic waste disposal facilities, and segregated waste stream disposal facilities.</p>	
West	<p><b>Map Code 4.2 (Interim Rural Community Plan (Actis))</b> - The Actis Interim Rural Community Plan map designates the area immediately west of the site as Map Code 7.2: Service Industrial.</p> <p><b>Map Code 7.2 (Service Industrial)</b> - See above.</p>	<p><b>Medium Industrial (M-2)</b> - Designates areas for general manufacturing, processing, and assembly activities. Uses may not produce fumes, odor, dust, smoke, gas, or vibrations extending beyond zoning district boundaries.</p> <p><b>Floodplain Primary (FPP)</b> - Protects public health and safety and minimizes property damage by designating areas that are subject to flooding with high velocities or depths and by establishing reasonable restrictions on land use in such areas. Uses in the FPP District are limited to those low-intensity uses not involving buildings, structures, and other activities that might adversely affect or be adversely affected by flow of water in the floodway.</p> <p><b>Precise Development (PD)</b> - See above.</p>
East/South	<p><b>Map Code 1.1 (State and Federal Land)</b> - See above.</p>	<p>Lands to the east and south of the site are within Edwards AFB, and are not subject to Kern County zoning.</p>

**TABLE 3.11-2  
LAND USE DESIGNATIONS SURROUNDING THE GEN-TIE LINE**

Portion of Gen-Tie Line Route Options	Summary of General Plan Land Use Designations	Summary of Surrounding Zoning Designations
North-South Gen-Tie Option 1	<p><b>Map Code 1.1 (State or Federal Land).</b> Applied to all property under the ownership and control of the various state and federal agencies operating in Kern County (military, U.S. Forest Service, Bureau of Land Management, Department of Energy, etc.).</p> <p><b>Map Code 2.5 (Flood Hazard).</b> Special Flood Hazard Areas (Zone A), as identified on the FIRM of the FEMA and supplemented by floodplain delineating maps that have been approved by the Kern County Engineering and Survey Services Department.</p> <p><b>Map Code 3.3 (Other Facilities).</b> Existing facilities used for public or semi-public services. Permitted uses include, but are not limited to, airports, sewer farms, treatment plants, and water spreading areas.</p> <p><b>Map Code 8.5 (Resource Management).</b> Primarily open-space lands 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.</p>	<p><b>Exclusive Agriculture (A).</b> Designates areas suitable for agricultural uses and prevents the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A District are limited primarily to agricultural uses and other activities compatible with agricultural uses.</p> <p><b>Limited Agriculture (A-1).</b> Designates 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.</p> <p><b>Floodplain Secondary (FPS).</b> This combining district protects public health and safety and minimizes property damage by designating areas that are subject to flooding with relatively low velocities or depths and by establishing reasonable restrictions on land use in such areas. The regulations established by the FPS District shall be in addition to the regulations of the base district with which the FPS District is combined.</p> <p><b>Mobile Home (MH).</b> This combining district provides for the installation of mobile homes with or without foundations in agricultural, resource-related, and residential zoned areas. The uses allowed and regulations established by the MH District are normally in addition to the regulations of the base district with which the MH District is combined.</p> <p><b>Residential Suburban (RS).</b> This combining district expands the number and type of permitted domestic agricultural uses within rural residential areas. The uses allowed and regulations established by the RS District are in addition to regulations of the base district with which the RS District is combined.</p>
North-South Gen-Tie Option 2	<p><b>Map Code 2.5 (Flood Hazard).</b> See above.</p> <p><b>Map Code 3.4.1 (Solid Waste Disposal Facility Buffer).</b> Areas, which are owned by the solid waste disposal facility, within 1,320 feet of a permitted disposal area as defined by the 3.4 Map Code designation.</p> <p><b>Map Unit 5.6 (Residential - Minimum 2.5 Gross Acres/Unit).</b> This constitutes a single-family designation with rural service needs in the valley and desert regions, while in the mountain region residential uses of this density will require urban service provision.</p> <p><b>Map Code 7.2 (Service Industrial).</b> Commercial or industrial activities which involve outdoor storage or use of heavy equipment. Such uses produce significant air or noise pollution and are visually obtrusive. Uses include automobile and truck parking, storage and repair shops, freighting or trucking yards, bottling plants, breweries, welding shops, cleaning plants, and other manufacturing and processing activities.</p>	<p><b>Exclusive Agriculture (A).</b> See above.</p> <p><b>Limited Agriculture (A-1).</b> See above.</p> <p><b>Estate (E).</b> Designates areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be one-quarter (1/4) acre unless the E District is combined with the Lot Size Combining District where a larger minimum lot size is specified.</p> <p><b>Floodplain Primary (FPP).</b> Applied to those areas lying within the "floodway" as shown on the Flood Boundary Floodway Map (FBFM) or within the "designated floodway" on the state of California's Board of Reclamation's Kern River Designated Floodway Studies, or other maps where engineering studies have been made and adopted by the county board of supervisors.</p> <p><b>Floodplain Secondary (FPS).</b> See above.</p>

**TABLE 3.11-2  
LAND USE DESIGNATIONS SURROUNDING THE GEN-TIE LINE**

Portion of Gen-Tie Line Route Options	Summary of General Plan Land Use Designations	Summary of Surrounding Zoning Designations
	<p><b>Map Code 7.3 (Heavy Industrial).</b> Large-scale industrial activities that are incompatible with other land uses because of potential severe environmental impacts and/or high employee densities. Uses include manufacturing, assembling and processing activities, transportation facilities, material and equipment storage, sawmills, foundries, refineries, and petroleum product storage.</p> <p><b>Map Code 8.5 (Resource Management).</b> See above.</p>	<p><b>Mobile Home (MH).</b> See above.</p> <p><b>Medium Industrial (M-2).</b> Designates areas for general manufacturing, processing and assembly activities. Uses may not produce fumes, odor, dust, smoke, gas or vibrations extending beyond zoning district boundaries.</p> <p><b>Heavy Industrial (M-3).</b> Designates areas suitable for heavy manufacturing and industrial uses which have the greatest potential for producing undesirable or adverse by-products, including traffic, noise, odors, dust and vibrations. The M-3 district should be located in places substantially removed from residential areas.</p> <p><b>Precise Development (PD) Combining District.</b> This combining district designates areas with unique site characteristics or environmental conditions or areas surrounded by sensitive land uses to ensure that development in such areas is compatible with such constraints. All development in the PD Combining District is subject as a minimum to Special Development Standards; however, a Special Development Standards Plot Plan Review is not required. The application of the PD District may be initiated by either the property owner or the County. The PD District may be combined with any base district. The regulations established by the PD District shall be in addition to the regulations of the base district with which the PD District is combined.</p>
East-West Gen-Tie Option	<p><b>Map Code 2.5 (Flood Hazard).</b> See above.</p> <p><b>Map Code 3.3 (Other Facilities).</b> See above.</p> <p><b>Map Code 5.2 (16 Dwelling Units/Net Acre Maximum).</b> Primarily intended for small multiple-family structures such as duplexes, triplexes, and mobile home parks which require a full array of urban services, with a minimum of 2,722 square feet of site area per unit and yielding a maximum of 16 units per net acre in conformance with precise development, cluster, or other special planning ordinance standards.</p> <p><b>Map Code 5.3 (10 Dwelling Units/Net Acre Maximum).</b> See above.</p> <p><b>Map Code 5.4 (4 Dwelling Units/Net Acre Maximum).</b> Designed to accommodate urban single-family development on lots with a minimum average size of 1/4 net acre.</p> <p><b>Map Code 5.6 (Residential – Minimum 2.5 Gross Acres/Unit).</b> See above.</p> <p><b>Map Code 6.2 (General Commercial).</b> Retail and service facilities of less intensity than regional centers providing a broad range of goods and services which serve the day-to-day needs of nearby residents.</p>	<p><b>Exclusive Agriculture (A).</b> See above.</p> <p><b>Limited Agriculture (A-1).</b> See above.</p> <p><b>Highway Commercial (CH).</b> Designates areas for uses and services normally associated with the traveling public. The CH district shall be located adjacent to or in close proximity to major highways. The CH district may be combined with the Cluster (CL) combining district to achieve innovative, creative commercial development. The CH district is intended to promote a unified grouping of travel-oriented uses such as gas stations, restaurants and motels. It is also intended to permit limited urban type uses in rural areas adjacent to highways with a minimum of encroachment on surrounding agricultural activities.</p> <p><b>Commercial Office (CO).</b> Designates areas suitable for business and professional offices. The CO district may serve as a buffer between retail commercial and residential areas. The CO district may also be combined with the Cluster (CL) combining district to achieve innovative, creative office or commercial development. Uses in the CD district are limited to low-intensity commercial activities and generally higher-density residential developments.</p> <p><b>Estate (E).</b> See above.</p>

**TABLE 3.11-2  
LAND USE DESIGNATIONS SURROUNDING THE GEN-TIE LINE**

<b>Portion of Gen-Tie Line Route Options</b>	<b>Summary of General Plan Land Use Designations</b>	<b>Summary of Surrounding Zoning Designations</b>
	<p><b>Map Code 6.3 (Highway Commercial).</b> Uses which provide services, amenities, and accommodations at key locations along major roadways to visitors and through traffic.</p> <p><b>Map Code 7.3 (Heavy Industrial).</b> See above.</p> <p><b>Map Code 8.5 (Resource Management).</b> See above.</p> <p><b>Low Den. Res. (Low Density Residential).</b> See above.</p>	<p><b>Floodplain Secondary (FPS).</b> See above.</p> <p><b>Mobile Home (MH).</b> See above.</p> <p>Heavy Industrial (M-3). See above.</p> <p>Precise Development (PD). See above.</p> <p><b>Low Density Residential (R-1).</b> Designates areas which will be suitable for traditional smaller lot, single-family homes and compatible uses. Maximum density is limited to ten (10) dwelling units per net acre. Typically, the R-1 district will be characterized by the typical single-family subdivision. However, innovative low-intensity projects are allowed in combination with the Cluster (CL) combining district.</p>
East-West Gen-Tie Option A and B	<p><b>Map Code 5.3 (10 Dwelling Units/Net Acre Maximum).</b> See above.</p> <p><b>Map Code 7.3 (Heavy Industrial).</b> See above.</p> <p><b>Map Code 8.3 (Extensive Agriculture).</b> Agricultural uses involving large amounts of land with relatively low value-per-acre yields, such as livestock grazing, dry land farming, and woodlands. Minimum parcel size is 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.</p> <p><b>Map Code 8.4 (Mineral and Petroleum).</b> Areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Uses are limited to activities directly associated with the resource extraction. Minimum parcel size is five acres gross.</p> <p><b>Map Code 8.5 (Resource Management).</b> See above.</p> <p><b>Low Den. Res. (Low Density Residential).</b> See above.</p>	<p><b>Exclusive Agriculture (A).</b> See above.</p> <p><b>Limited Agriculture (A-1).</b> See above.</p> <p><b>Heavy Industrial (M-3).</b> See above.</p> <p><b>Open Space (OS).</b> Designates lands in public or private ownership that are essentially unimproved and should remain in open space use for the preservation of identified scenic values, habitat for endangered plants or animals, unique geologic features, natural resources, passive recreational values, or for the protection of public health and safety.</p> <p><b>Platted Lands (PL).</b> Recognizes legally existing lots within recorded subdivisions which had been rendered nonconforming 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. Future land divisions within the PL district are prohibited.</p> <p><b>Residential Suburban (RS).</b> See above.</p> <p><b>Wind Energy (WE).</b> A combining district and shall only be applied to the following district classifications: Exclusive Agriculture (A), Industrial (M-1, M-2, and M-3), Natural Resource (NR) with a minimum lot size of twenty (20) acres, Recreation-Forestry (RF) with a minimum lot size of twenty (20) acres, Limited Agriculture (A-1) with a minimum lot size of twenty (20) acres, or Estate (E) with a minimum lot size of twenty (20) acres. The uses allowed and the regulations required in the WE district shall be in addition to the regulations of the base district with which the WE district is combined. The WE district may not be adopted as a single land use designation.</p>

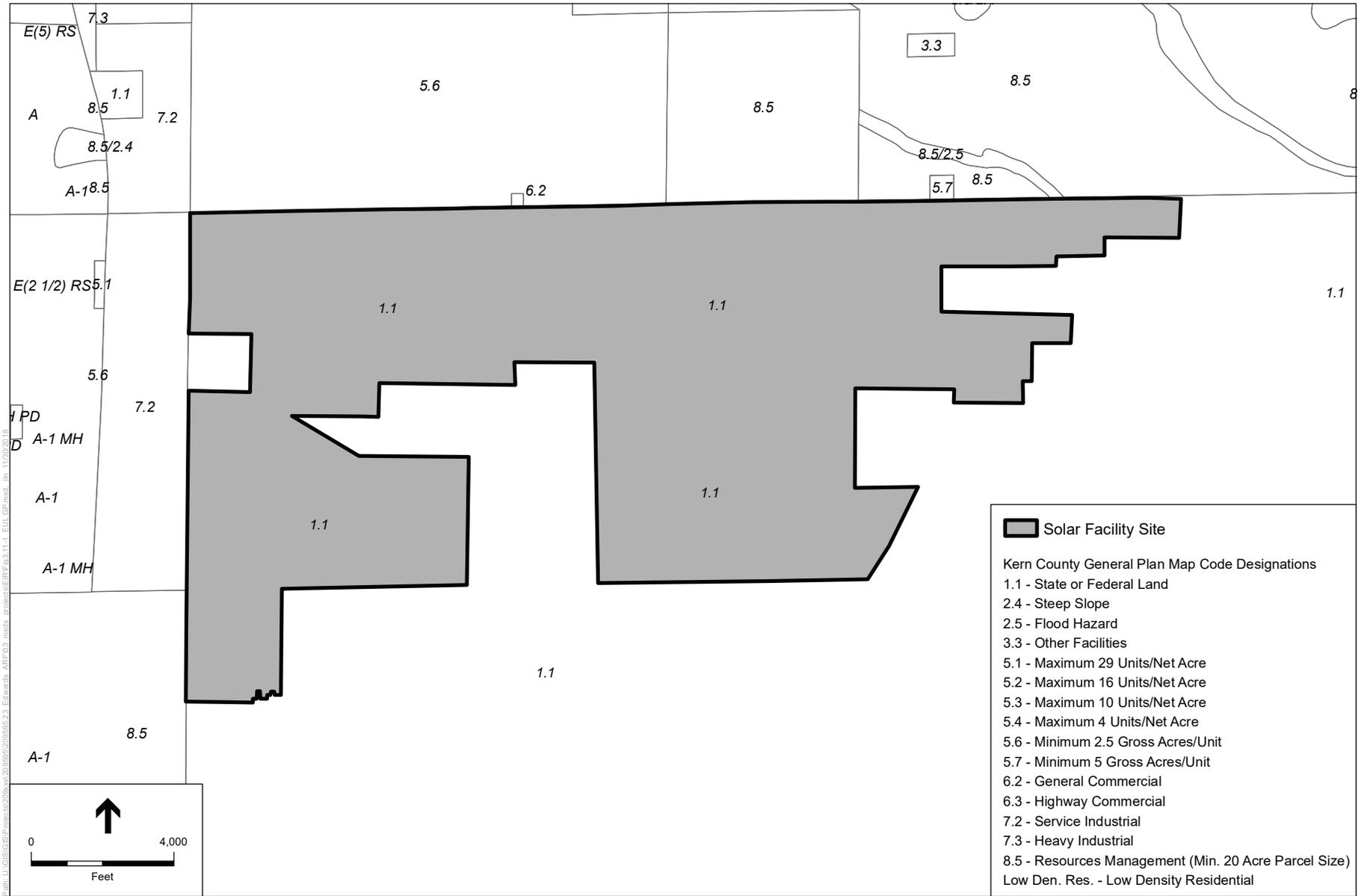


Figure 3.11-1: EXISTING GENERAL PLAN: SOLAR GENERATION FACILITY

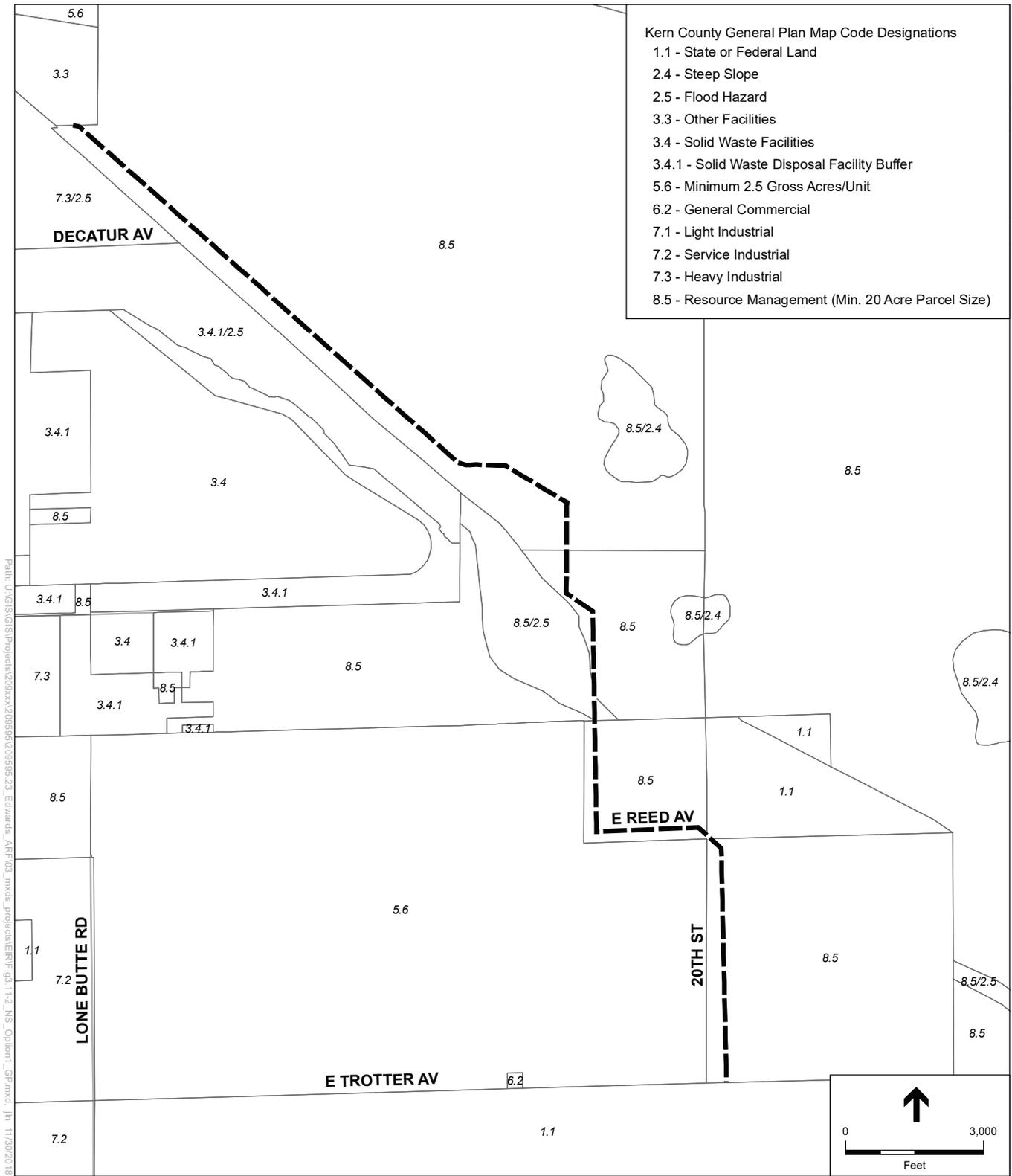


Figure 3.11-2: EXISTING GENERAL PLAN: NORTH-SOUTH GEN-TIE ROUTE OPTION 1

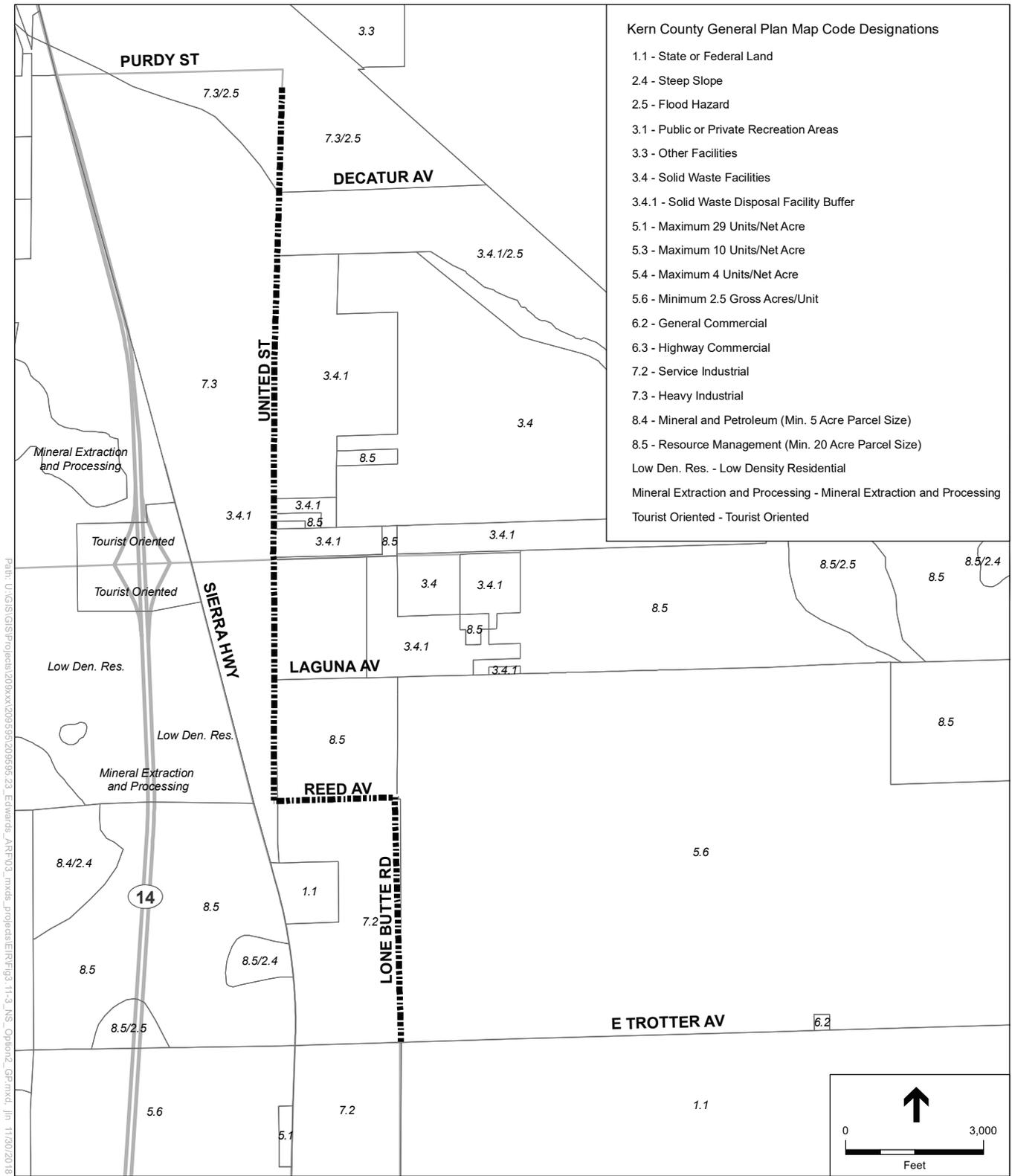


Figure 3.11-3 EXISTING GENERAL PLAN: NORTH-SOUTH GEN-TIE ROUTE OPTION 2

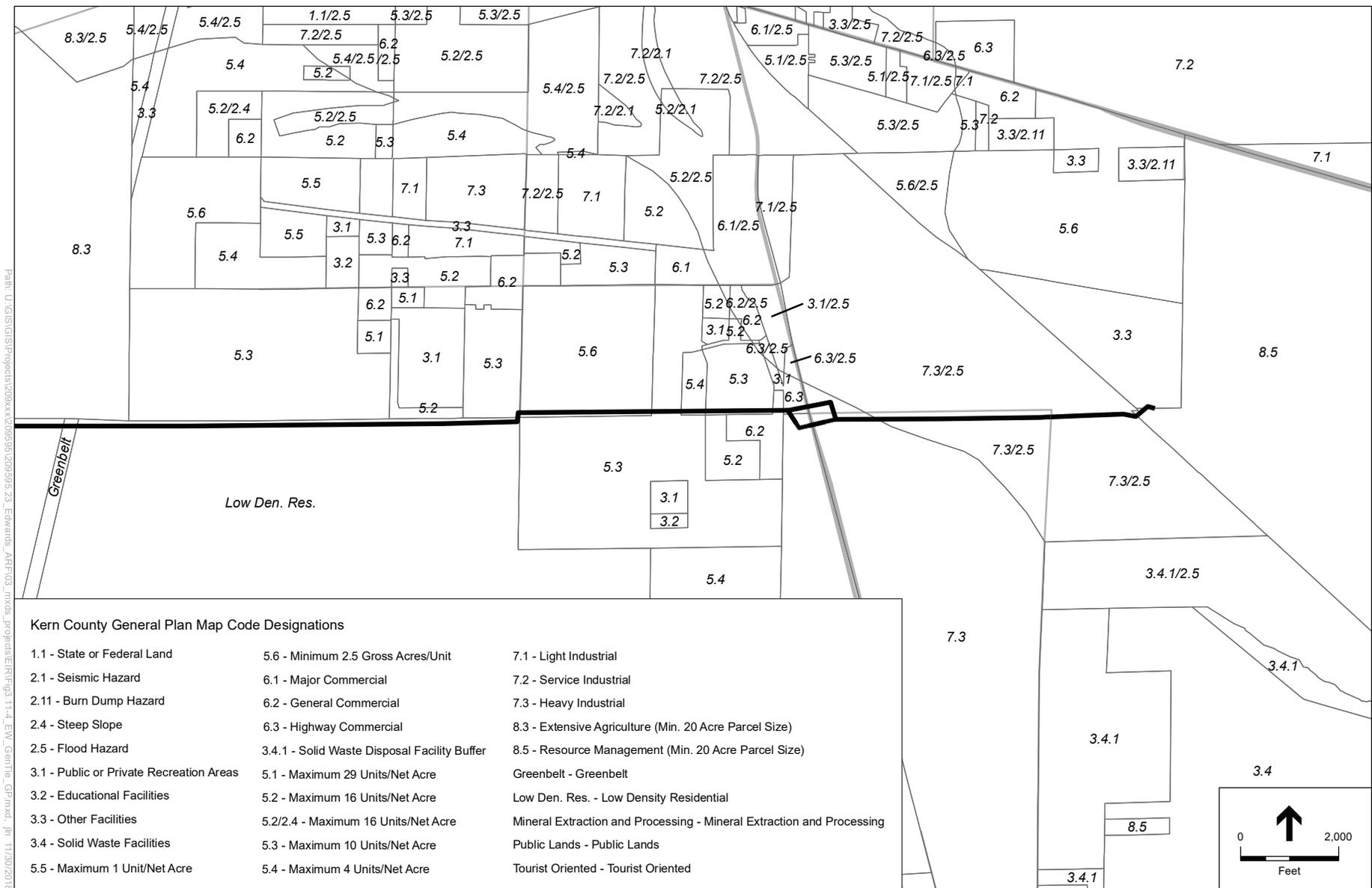


Figure 3.11-4: EXISTING GENERAL PLAN: EAST WEST GEN-TIE ROUTE OPTION

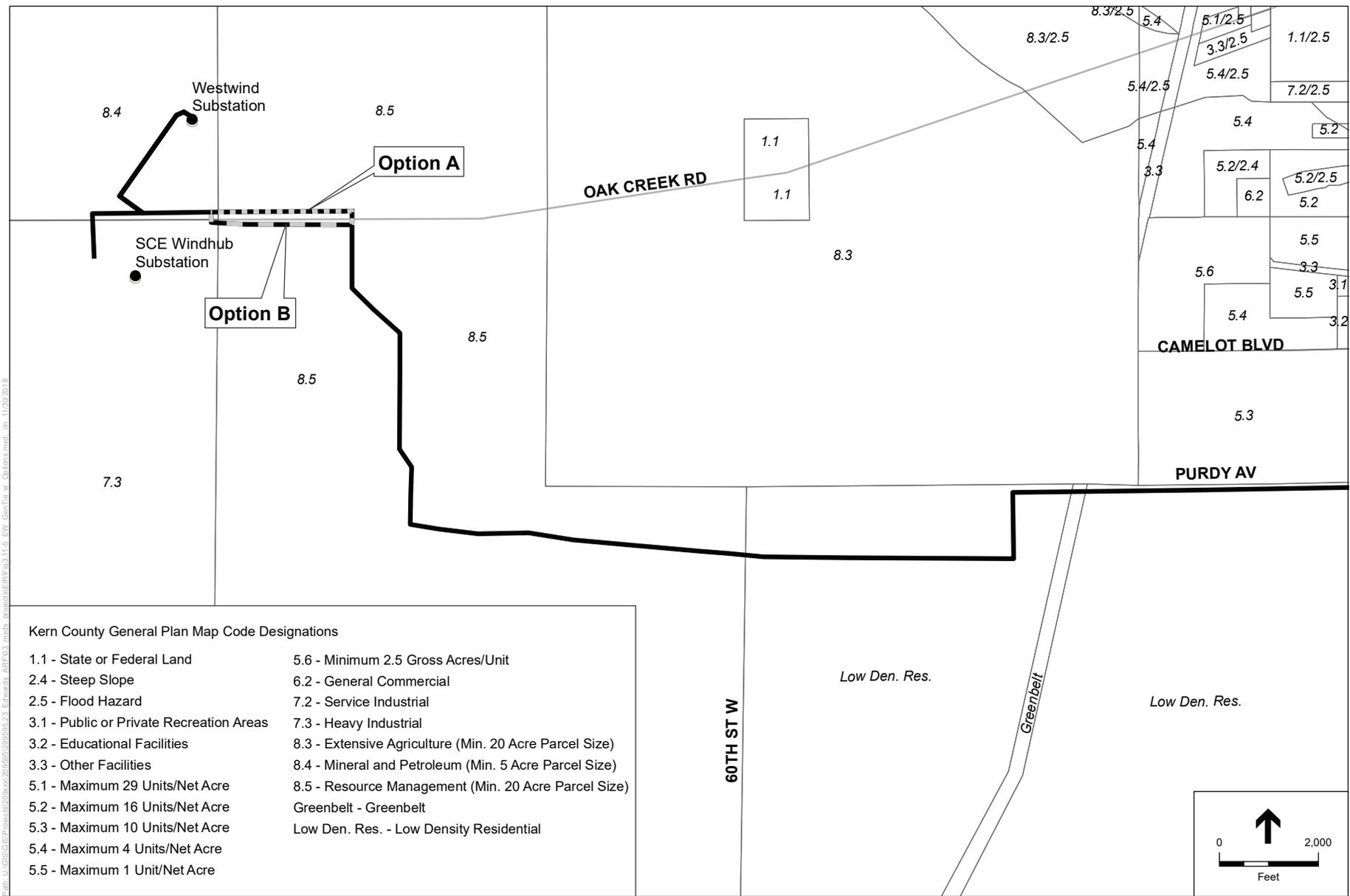


Figure 3.11-5: EXISTING GENERAL PLAN: EAST WEST GEN-TIE ROUTE OPTIONS A & B

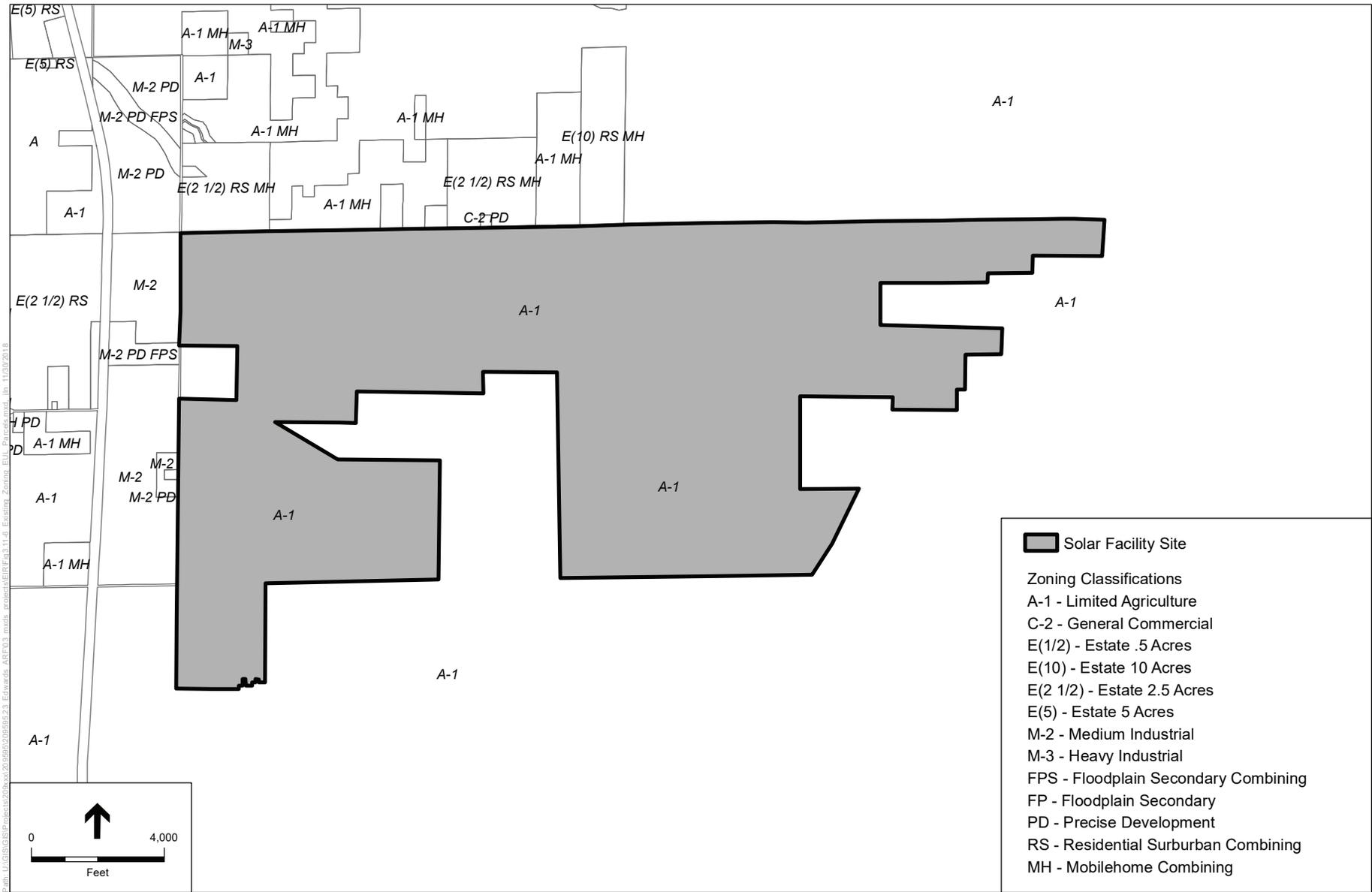


Figure 3.11-6: EXISTING ZONING: SOLAR GENERATION FACILITY





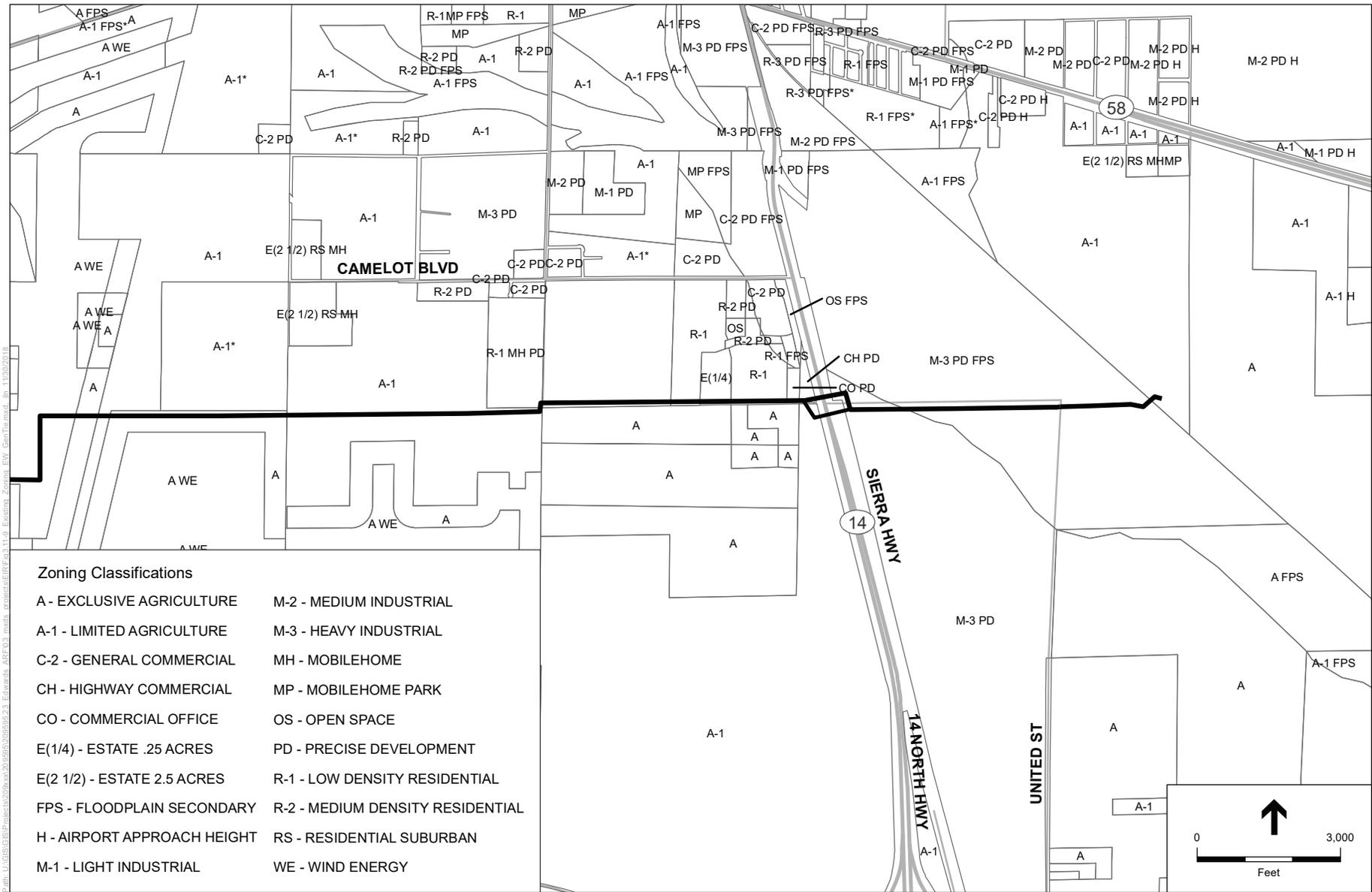


Figure 3.11-9: EXISTING ZONING: EAST-WEST GEN-TIE ROUTE OPTION

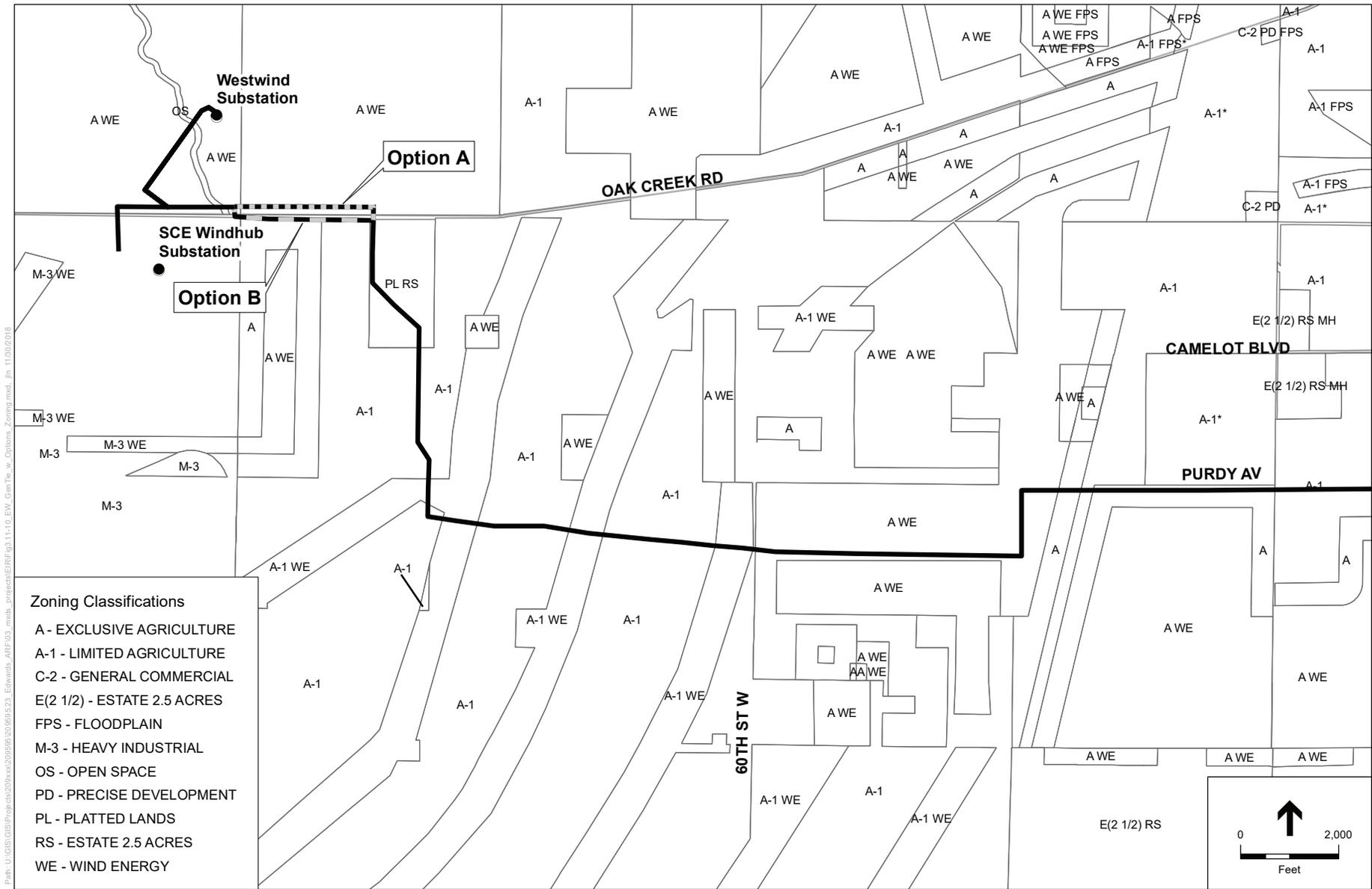


Figure 3.11-10: EXISTING ZONING: EAST-WEST GEN-TIE ROUTE OPTIONS A & B

## 3.11.2 Environmental Consequences

This section of the EIS/EIR describes the environmental consequences relating to land use for the Edwards AFB EUL Solar Project. It describes the methods used to determine the effects of the proposed project and lists the thresholds used to conclude whether an effect would be significant.

### 3.11.2.1 Assessment Methods/Methodology

The potential impacts associated with the proposed project were evaluated on a qualitative basis through a comparison of the existing and proposed land uses, in consideration of the applicable planning goals, policies, and objectives identified above. The evaluation of project impacts is based on professional judgment, analysis of the land use policies of Edwards AFB and Kern County and the significance criteria established in Appendix G of the CEQA Guidelines. Compliance with the aforementioned policies is illustrated in a consistency tables provided in the project impact section, below.

### 3.11.2.2 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was significant related to land use and safety if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice.

A project would have a significant adverse effect on land use if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan, Specific Plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

The County determined in the NOP (see Appendix A) that the following environmental issue areas would result in no impacts or less-than-significant impacts and were therefore scoped out of requiring further review in this EIS/EIR.

- Physically divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Please refer to Appendix A of this EIS/EIR for a copy of the Initial Study/NOP and additional information regarding this issue.

### 3.11.3 Analysis of Environmental Effects

#### 3.11.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### **NEPA: Environmental Impacts**

The following provides consistency determinations for land use plans, policies, and regulations that are applicable to the proposed project:

##### **Federal Aviation Administration**

FAR Title 14, Part 77, establishes the standards for determining obstructions in navigable airspace, including height limitations on structures taller than 200 feet or within 20,000 feet (3.8 miles) of an airport runway. Under Alternative A, the photovoltaic (PV) panels are not likely to exceed 12 feet above the ground surface. The substation equipment would generally be between 15 and 35 feet tall, with the exception of the transmission towers, which would be a maximum of 60 feet in height and a lightning protection mast, which would not exceed 75 feet in height. The height of poles for the gen-tie line would likely range between 100 and 180 feet, and would not to exceed 200 feet. Refer to EIS/EIR Section 3.4, *Airspace Management and Use*, for further information on the FAA.

##### **Edwards AFB Installation Development Plan**

The land use zoning designations contained in the Edwards AFB IDP provide guidance for development and improvement of the base to ensure an efficient, aesthetic, and safe environment for base personnel. The proposed solar facility would be located in an area designated with a land use category of Research and Development and a zoning of Range Zone by the Edwards AFB IDP (USAF, 2012).

The Research and Development land use category covers approximately 244,515 acres, a majority of the undeveloped lands within Edwards AFB (95th Air Base Wing, 2012). Lands designated for Research and Development are intended to be used directly in basic or applied research in science, medicine, or engineering, and can include structures and facilities used in space and aeronautics research. The Edwards AFB IDP includes guidance regarding the compatibility of different land use designations assigned to the base. Per the Edwards AFB IDP, the Research and Development land use category is considered to be compatible with several other land use categories, including Communications Systems, Industrial, Office Buildings, Storage, Training Land, and Other (including utility infrastructure, electrical substations, and support facilities) (95th Air Base Wing, 2012). As a result, the proposed solar facility, which would include utility infrastructure, electric substations, and supporting operation and maintenance office buildings, would be considered compatible with the existing Research and Development land use designation.

Lands included in the Range Zone zoning category include a wide range of activities not included in other zoning designations. One of the potential future uses of Range Zone areas specified by the Edwards AFB IDP is development of solar power facilities and other leased land uses (95th Air Base Wing, 2012). Therefore, the proposed solar facility would be considered compatible with the zoning designation of the project site under the Edwards AFB IDP.

### **Kern County General Plan and Specific Plans**

Because the proposed solar facility would be located on Edwards AFB, it would not be subject to the plans and policies contained in the Kern County General Plan and Specific Plans.

The proposed route options for the gen-tie line would traverse lands under the jurisdiction of Kern County and would pass through lands subject to the Kern County General Plan, Mojave Specific Plan, South Mojave Elephant Butte Specific Plan, West Edwards Road Settlement Specific Plan, Actis Interim Rural Community Plan Map. An analysis of the proposed project's consistency with applicable Kern County General Plan and Specific Plan policies and objectives is provided in Table 3.11-3 of this EIS/EIR. Based on this analysis, the proposed project would be consistent with the Kern County General Plan and applicable Specific Plans.

### **Kern County Zoning Ordinance**

Because the proposed solar facility would be located on Edwards AFB, it would not be subject to the Kern County Zoning Ordinance.

As described, the proposed route options for the gen-tie line would traverse lands under the jurisdiction of Kern County and would therefore be subject to the Kern County Zoning Ordinance. As shown in Table 3.11-2, lands within the proposed route options fall under a wide variety of zoning classifications. Per the Kern County Zoning Ordinance, utility and communications facilities, including transmission lines and supporting towers, poles, and underground facilities, are permitted uses under the applicable zoning classifications. Therefore, the proposed project would be consistent with the Kern County Zoning Ordinance.

The proposed project would be located across three military review zones as shown on figure 19.08.160 in the Kern County Zoning Ordinance, including hatched green (no review requirement, County to provide building permit summary), yellow (all structures over 500 feet), and hatched red (all wind turbines and communication towers over 80 feet, all other structures over 100 feet). Per Section 19.08.160 of the Zoning Ordinance, structures exceeding the maximum heights established for each zone must obtain concurrence from the military authority responsible for operations in that area that the height of the structure would create no significant military mission impacts. As described in Chapter 2, *Project Description*, poles associated with the gen-tie line may be up to 180 feet tall and therefore would be required to undergo military review. For further discussion of the relationship of the project to military flight operations please refer to Section 3.4, *Airspace Management and Use*.

### **Kern County Airport Land Use Compatibility Plan**

The proposed solar facility would be located approximately 6 miles from the Mojave Air and Space Port and 8 miles from the Edwards AFB airport facilities. At the nearest point, the proposed route for the gen-tie line would pass within 1.5 miles of the Mojave Air and Space Port. Section 4.9.5 of the ALUCP defines policies associated with the Mojave Air and Space Port, including requirements regarding the height of proposed structures as well as certain land use characteristics such as glare. The proposed solar facility would be located outside of the Mojave Airport influence area. Furthermore, as the proposed solar panels would be composed of anti-reflective material, glare resulting from the panels is not expected to be a concern for pilots and would not result in conflict

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1 with the policies of the ALUCP (refer to Section 3.4, *Airspace Management and Use*, for further  
2 details regarding glare). Depending on the final route, the gen-tie line may be constructed within  
3 Influence Zones D, E1, and E2 of the Mojave Air and Space Port. As described in Chapter 2, *Project*  
4 *Description*, poles associated with the gen-tie line may be up to 100-180 feet tall, which would  
5 exceed the 100-foot height limit for structures in Zone E-1. However, as previously discussed, the  
6 ALUCP provides an exemption to these height requirements for gen-tie lines. Therefore, the gen-  
7 tie line would comply with the ALUCP.

8 Section 1.7.1 of the ALUCP requires that, prior to approval of any type of land use development,  
9 findings shall be made that such development is compatible with training and operational missions  
10 of relevant military operations. Section 4.17.3 of the ALUCP requires notification of construction  
11 of the project to China Lake Naval Air Weapons Station and Edwards AFB. For further discussion  
12 of the relationship of the project to military flight operations please refer to Section 3.4, *Airspace*  
13 *Management and Use*.

14 Additionally, the proposed project would not result in an increase in air traffic levels or a change  
15 in location of air traffic patterns that would result in a substantial safety risk, as air traffic patterns  
16 would not be affected. As a result, the proposed project would be consistent with the Kern County  
17 ALUCP.

### 18 **CEQA: Impact Significance Determination**

19 **Impact 3.11-1: The project would conflict with an applicable land use plan, policy, or**  
20 **regulation of an agency with jurisdiction over the projects (including, but not limited to, the**  
21 **General Plan, Specific Plan, local coastal program, or zoning ordinance) adopted for the**  
22 **purpose of avoiding or mitigating an environmental effect.**

23 As discussed in the NEPA analysis, the proposed project would not conflict with FAA regulations  
24 or the Edwards AFB IDP. Additionally, the proposed project would not conflict with the Kern  
25 County General Plan, the Mojave Specific Plan, the South of Mojave-Elephant Butte Specific Plan,  
26 the West Edwards Road Settlement Specific Plan, Actis Interim Rural Community Plan Map, the  
27 Kern County Zoning Ordinance, or the Kern County ALUCP as reflected in Table 3-11.3.  
28 Therefore, impacts related to conflict with applicable land use plans, policies, and regulations  
29 would be less than significant.

### 30 **Mitigation Measures**

31 No mitigation measures are required.

### 32 **Level of Significance after Mitigation**

33 Impacts would be less than significant.

### 34 **3.11.3.2 Alternative B: 1,500-Acre EUL**

#### 35 **NEPA: Environmental Impacts**

36 Alternative B would consist of the same land uses as Alternative A on a reduced scale. Alternative  
37 B includes the construction of a utility-scale solar facility on 1,500 acres of land located within the  
38 same site as Alternative A (approximately one-third to one-half of the acreage of Alternative A).

1 Alternative B would utilize the same gen-tie line route options proposed in Alternative A. Because  
2 Alternative B would be located on the same sites as Alternative A, Alternative B would be subject  
3 to the same plans and policies as described above for Alternative A. Land uses proposed under  
4 Alternative B would be the same as those proposed under Alternative A; therefore, potential  
5 impacts to land use would be the same as described above under Alternative A.

#### 6 ***CEQA: Impact Significance Determination***

7 Alternative B would be located on the same site as the solar facility and would use the same and  
8 the gen-tie route options, and would be subject to the same plans and policies as Alternative A.  
9 Because Alternative B would consist of the same land uses as Alternative A, significance  
10 conclusions for Alternative B would be the same as Alternative A, as shown in Table 3-11.3.  
11 Therefore, Alternative B would be considered consistent with all applicable plans, policies, and  
12 regulations and impacts would be less than significant.

#### 13 **Mitigation Measures**

14 No mitigation measures are required.

#### 15 **Level of Significance after Mitigation**

16 Impacts would be less than significant.

### 17 **3.11.3.3 Alternative C: No Action/No Project**

#### 18 ***NEPA: Environmental Impacts***

19 Under this alternative, none of the components proposed under Alternative A would be built. If  
20 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
21 environmental setting described above. Thus, Alternative C would not affect the land use plans,  
22 policies, and regulations described.

#### 23 ***CEQA: Impact Significance Determination***

24 Alternative C would result in no impacts regarding conflict with land use plans, policies, or  
25 regulations.

#### 26 **Mitigation Measures**

27 No mitigation measures are required.

#### 28 **Level of Significance after Mitigation**

29 No impact.

30

## 3.11.4 Cumulative Impact Analysis

### 3.11.4.1 NEPA: Cumulative Environmental Effects and Their Significance

The geographic scope for cumulative effects relating to land use includes the areas located within the Kern County General Plan and Specific Plans and Edwards AFB IDP. There are multiple projects, identified in Table 3-1, including 44 utility-scale solar and wind energy production facilities, are proposed throughout Kern County. Many are located, like the project site, in the Antelope Valley and Mojave Desert. Cumulative impacts to land use could occur if other existing or proposed projects, in conjunction with the project, had or would have impacts on land use that, when considered together, would be significant.

The anticipated impacts of the proposed project in conjunction with cumulative development in the area of the projects could increase urbanization and result in the loss of open space within the desert region of the County. The potential for the cumulative effects caused by the abandonment of the infrastructure associated with the solar facility on Edwards AFB could result in impacts on land uses on base should it be determined that these facilities are no longer viable commercial operations. Decommissioning of a solar facility on Edwards AFB will require a separate NEPA analysis and financing for decommissioning will be provided by the Developer as part of the EUL agreement. 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. The applicable General Plans, Specific Plans, and zoning requirements establish the land use goals, policies, and permitted uses for existing and future development in the project region. As shown in Table 3.11-3, the proposed project would be consistent with the goals and policies of the applicable General and Specific Plans as well as other policies related to land use. In addition, the proposed project would be an allowable use that would not conflict with the applicable zoning classifications. By complying with the General Plans, Specific Plans, and zoning, the proposed project would not result in an adverse cumulative land use impact.

### 3.11.4.2 CEQA: Cumulative Impact Significance Determination

The geographic scope for cumulative effects relating to land use includes the areas located within the Kern County General Plan and Specific Plans and Edwards AFB IDP. This scope was selected because the applicable General Plans, Specific Plans, and zoning establish the land use goals, policies, and permitted used for existing and future development in the project region. As described in Chapter 2, *Project Description*, there are a number of solar and other development projects, proposed throughout Antelope Valley including in Kern County and Los Angeles County. Many are located, like the project site, in the Mojave Desert. Cumulative impacts to land use could occur if other existing or proposed projects, in conjunction with the project, had or would have impacts on land use that, when considered together, would be significant. The surrounding area is still relatively rural in nature, to the north, the project site borders approximately 30 existing residences along Trotter Avenue, with the land use designation of Limited Agriculture (Zone A-1) and Exclusive Agriculture (E) by the Kern County Zoning Ordinance. To the east and south of the project site the land is undeveloped and lies within the perimeter of Edwards AFB. To the west, the project site borders scattered single-family homes and industrial uses.

1 The proposed project and present or future cumulative projects would contribute to a change in  
2 land use consistent with other renewable energy development in and around the project site, and  
3 result in a cumulative impact to land uses in the region. Currently, there are five solar development  
4 projects within the vicinity of the proposed project that would result in impacts similar to the  
5 Edwards AFB Solar Project. These projects include the Beacon Solar (approved in 2012), Willow  
6 Springs Solar (EIR Certified March 2016), Catalina Renewables (operational in 2013), North  
7 Lancaster Ranch (approved 2014), and R E Rosamond (approved in 2011). Similar to the proposed  
8 project, the land use impacts of solar projects within vicinity are inconsistency with an applicable  
9 land use plan, policy, or regulation of an agency with jurisdiction of over the projects. However,  
10 the impacts from all other five projects were determined less than significant in their analysis and  
11 impacts from the proposed project in conjunction with surrounding projects have also been  
12 determined to be less than significant. The significance determination is based on the fact that each  
13 project has demonstrated in the analysis consistency with the Kern County General Plan, Kern  
14 County Zoning Ordinance, and other applicable Specific Plans.

15 With regard to cumulative effects of utility-sized solar power generation facilities, there is a  
16 potential that outside factors—such as the development of newer technology, change in state or  
17 national policy that encourages the construction of such facilities, or other economic factors—could  
18 result in the abandonment of such facilities. Unlike other facilities that, once constructed, can be  
19 retrofitted and utilized for another specific use, solar power generation facilities have little  
20 opportunity for other uses should the site not be in operation. The potential for the cumulative  
21 effects caused by the abandonment of multiple solar facilities in Kern County could result in  
22 impacts on surrounding land uses should it be determined that these facilities are no longer viable  
23 commercial operations. Therefore, a mitigation measure related to the decommissioning of project  
24 facilities on land under the jurisdiction of Kern County has been included to establish safeguards  
25 to ensure the maintenance of the health, safety, and welfare of the citizens of the county. While it  
26 is the intent of Kern County to promote the use of an alternative to fossil-fuel-generated electrical  
27 power in areas of the county that are identified to have suitable characteristics for production of  
28 commercial quantities of solar PV-generated electrical power, it is necessary to protect surrounding  
29 landowners from potential impacts associated with the abandonment of such facilities.  
30 Implementation of Mitigation Measure MM 3.11-1a for the solar facility portion of the site and  
31 Mitigation Measure MM 3.11-1b for the gen-tie portion of the site, both discuss the requirements  
32 of a decommissioning plan to ensure the maintenance of health, safety and welfare of the citizens  
33 of the county in the event the solar facility ends operation.

34 The anticipated project impacts in conjunction with cumulative development in the project area  
35 would result in the loss of open space within the Antelope Valley. Potential land use impacts require  
36 evaluation on a case-by-case basis, such as land use compatibility impacts, which are the interactive  
37 effects of a specific development and its immediate environment. The proposed project is located  
38 among other approved solar projects that take advantage of a recently upgraded transmission  
39 system that was built for the purpose of interconnecting renewable energy projects within the  
40 region. However, as discussed above, the proposed project would maintain consistency with the  
41 goals and policies of the Kern County General Plan. In addition, with approval of all discretionary  
42 requests, the proposed project would be an allowable use that would not conflict with the land use

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1 or zoning classification for the sites. Therefore, the proposed project would not have a cumulatively  
2 considerable impact regarding land use.

3 **Mitigation Measures**

4 Implement Mitigation Measure MM 3.11-1a and Mitigation Measure MM 3.11-1b (see Section  
5 3.11.5 for mitigation measures).

6 **Level of Significance after Mitigation**

7 Cumulative impacts would be less than significant.

8 **3.11.5 Mitigation Measures**

9 **3.11.5.1 Solar Facility Mitigation Measures**

10 **MM 3.11-1a: Decommission Plan.** Except as otherwise agreed to in writing by the Government,  
11 Lessee shall, at no cost to the Government:

- 12 1. Remove all of the Improvements from the Leased Premises. Lessee shall restore the Leased  
13 Premises to a condition substantially similar to that which existed on the Effective Date of  
14 the Lease, including but not limited to re-establishment (if applicable) vegetation to control  
15 erosion in accordance with Government standards.
- 16 2. No later than 3 years prior to the Restoration Deadline, Lessee shall provide to the  
17 Government a report prepared by a construction and demolition expert reasonably  
18 acceptable to the Government, which report details and estimates the cost of satisfying the  
19 Removal and Restoration Obligation (the “Estimated Restoration Costs”), together with a  
20 written plan which sets forth how Lessee proposes to discharge its Removal and  
21 Restoration Obligation (an “Improvement Removal Report”) and establish an escrow  
22 account with a commercial escrow holder reasonably satisfactory to the Government and  
23 deposit into it the full amount of the Estimated Restoration Costs (“Demolition Reserve  
24 Account”).
  - 25 a. The Demolition Reserve Account shall be subject to procedures and controls to be set  
26 forth in a written agreement between Lessee, the Government and the escrow holder  
27 (“Demolition Reserve Escrow Agreement”).
  - 28 b. If Lessee does not satisfy its Removal and Restoration Obligation on or before the  
29 Restoration Deadline (“Restoration Default”), the Government shall be entitled, in  
30 addition to other available remedies, to (i) take ownership of the Lessee Improvements  
31 without compensation therefore, or (ii) cause the Lessee Improvements to be removed  
32 or destroyed, and the Leased Premises to be restored at the expense of Lessee.

33 **3.11.5.2 Gen-tie Mitigation Measures**

34 **MM 3.11-1b: Decommission Plan.** Prior to issuance of any building permit, the project proponent  
35 shall provide the Kern County Planning and Natural Resources Department with a Decommission  
36 Plan for review and approval. The plan would be carried out by the proponent or a County-  
37 contracted consulting firm(s) at a cost to be borne by the project proponent.

- 38 1. The Decommission Plan including, but not limited to the following:

- 1 a. Factor in the cost to remove the gen-tie lines and other support structures, replace any  
2 disturbed soil from the removal of support structures (including all underground  
3 equipment), and control of fugitive dust on the remaining undeveloped land.
- 4 b. Salvage value for the support structures shall be included in the financial assurance  
5 calculations.
- 6 c. The assumption, when preparing the estimate, is that the project proponent is incapable  
7 of performing the work or has abandoned the gen-tie lines, thereby resulting in the  
8 County hiring an independent contractor to perform the decommission work.
- 9 2. In addition to submittal of a Decommission Plan for the gen-tie lines, the project proponent  
10 shall post or establish and maintain with the County financial assurances related to the  
11 deconstruction of the gen-tie sites as identified on the approved Decommission Plan should  
12 at any point in time the project proponent determine it is not in their best interest to operate  
13 the facility. The financial assurance required prior to issuance of any building permit shall  
14 be established using one of the following:
  - 15 a. An irrevocable letter of credit.
  - 16 b. A surety bond.
  - 17 c. A trust fund in accordance with the approved financial assurances to guarantee the  
18 deconstruction work will be completed in accordance with the approved  
19 decommission plan.
- 20 3. The financial assurances documents shall include the following verbiage, including any  
21 required verbiage through Kern County Planning and Natural Resources Department's  
22 consultation and review with Kern County Counsel:
  - 23 d. Financial institution or Surety Company shall give the County a minimum of  
24 120 days' notice of intent to terminate the letter of credit or bond.
  - 25 e. Financial assurances shall be reviewed annually by the respective counties or  
26 County-contracted consulting firm(s) at a cost to be borne by the project proponent  
27 to substantiate those adequate funds exist to ensure deconstruction of all gen-tie  
28 lines and support structures identified on the approved Decommission Plan.
  - 29 f. Should the project proponent deconstruct the site on their own, the County will not  
30 pursue forfeiture of the financial assurance.
  - 31 g. Financial institution or Surety Company shall be licensed to conduct business in  
32 the state of California.
- 33 4. Once deconstruction has occurred, financial assurance for that portion of the site will no  
34 longer be required and any financial assurance posted will be adjusted or returned  
35 accordingly. Any funds not utilized through decommission of the site by the County shall  
36 be returned to the project proponent.
- 37 5. Should any portion of the generation tie-line poles not be in operational condition for a  
38 consecutive period of 24 months, that portion of the site shall be deemed abandoned and  
39 shall be removed within 60 days from the date a written notice is sent to the property owner  
40 and solar field owner, as well as the project proponent, by the County. Within this 60-day  
41 period, the property owner, solar field owner, or project proponent may provide the County  
42 a written request and justification for an extension for an additional 12 months. The Kern  
43 County Planning and Natural Resources Director shall consider any such request at a

3.11 Land Use

1 Director’s Hearing as provided for in Section 19.102.070 of the Kern County Zoning  
2 Ordinance.

3 6. In no case shall a generation tie-line pole which has been deemed abandoned be permitted  
4 to remain in place for more than 48 months from the date the solar facility was first deemed  
5 abandoned.

6 **3.11.6 Residual Impacts after Mitigation**

7 The Decommissioning Financial Plan will establish safeguards to ensure the maintenance of the  
8 health, safety, and welfare of the citizens of the county. No residual impacts after mitigation are  
9 anticipated.

10 **3.11.7 Project Consistency with Applicable Plans**

11 Table 3.11-3 summarizes the consistency of the proposed project with all applicable goals and  
12 policies of the Kern County General Plan, the Mojave Specific Plan, the South Mojave Elephant  
13 Butte Specific Plan, the West Edwards Road Settlement Specific Plan, Actis Interim Rural  
14 Community Plan Map, and relevant planning documents that are applicable to the proposed project  
15 sites.

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<b>Kern County General Plan</b>		
<b>1.3 Physical and Environmental Constraints</b>		
<b>Policy 2</b> 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.	Consistent	Consistent with this policy, the proposed project would develop a solar PV power-generating facility that is not located on a hazardous site. Final review of the proposed project by the Kern County Planning and 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.
<b>Policy 3</b> Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.	Consistent	See 1.3, Physical and Environmental Constraints, Policy 2, above.
<b>Policy 8</b> Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.	Consistent	Hydrology impacts are evaluated in Section 3.17, <i>Hydrology and Water Quality</i> . The proposed project would be designed to avoid existing drainage patterns, and drainage facilities installed near the solar panels would be designed to allow surface water flows to pass through the project site. The gen-tie line would either be positioned above or below ground surface and not in the path of flood flows. The Final Hydrology Report would include final designs of the proposed retention basins, which would impede and redirect flood flows as they would be sized to capture the predicted increase in runoff post-construction and release it at a location and rate similar to existing conditions.

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<p><b>Policy 10</b> 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 the General Plan.</p>	<p>Consistent</p>	<p>The entire portion of the project site located on Edwards AFB is located in Flood Zone D, which is defined as an area with possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. Lands adjacent to the Edwards AFB have a Zone A flooding hazard that seems to carry onto the site into Edwards AFB. Zone A is defined as an area with a 1 percent change of annual flooding. Flow velocities across the project site are very low due to its relative flatness. Because the proposed project would be designed to allow surface water flows to pass through the project site, and the gen-tie line would be positioned either above or below ground surface and not in the path of flood flows, the project would not increase the potential for flooding beyond existing conditions. The proposed project would use mapped flood zones, and the construction and decommissioning laydown areas would be located to avoid flood zones. No adverse impacts related to flood zones are expected. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance.</p>
<p><b>1.4 Public Services and Facilities</b></p>		
<p><b>Goal 1</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.13-1a, MM 3.9-6a, MM 3.13-1b, and MM 3.9-8b.</p>	<p>As discussed in Section 3.13, <i>Public Services</i>, the project would be required to pay a fee assigned by the Kern County Planning and Community Development Department over the life of the proposed facilities 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 Community Development Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded.</p>
<p><b>Policy 1</b> New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.</p>	<p>Consistent</p>	<p>Impacts to utilities are evaluated in Section 3.11, <i>Infrastructure</i>. No sewage or disposal connections to the Edwards AFB sewer system or a municipal sewer system would be implemented. This EIS/EIR serves to comply with this policy, and the proposed project would pay a fair share of any infrastructure improvements required.</p>

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<b>1.9 Resource</b>		
<b>Goal 3</b> Ensure the development of resource areas minimize effects on neighboring resource lands.	Consistent	The gen-tie line would be compatible with open space and other resource management land uses, and would be designed to minimize effects on neighboring lands.
<b>Goal 4</b> 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 would develop a solar PV power-generating facility designed to produce greater than 100 MW. The project would develop a clean energy source that would create fewer fossil fuel emissions, thus protecting the environment. Final review of the proposed project by the Kern County Planning and 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.
<b>Goal 6</b> 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 a solar PV power-generating facility designed to produce greater than 200 MW of solar power. The project would develop a clean energy source that would create fewer fossil fuel emissions, thus protecting the environment.
<b>Policy 1</b> 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.
<b>Policy 3</b> The County will support programs and policies that provide tax and economic incentives to ensure the long-term retention of agriculture, timber, and other resource lands.	Consistent	The gen-tie line is compatible with open space and other resource management land uses and is not expected to diminish the ability of adjacent lands to support agricultural or other resource uses.
<b>Policy 8</b> Provide for the orderly expansion of new urban-scale infrastructure and development and the creation of new urban-scale centers in a manner that minimizes adverse effects on agriculture and natural resource uses.	Consistent	The gen-tie line would be placed on undeveloped land and within existing roadways and would not compromise natural resource uses. The project is consistent with this policy because it promotes the preservation and use of available natural resources.
<b>Policy 16</b> 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 greater than 100 MW of solar power. Consistent with this policy, the proposed project would generate solar energy and offset an equivalent amount of fossil fuel-generated electrical power.

**TABLE 3.11-3**  
**CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<b>Policy 19</b> Work with other agencies to define regulatory responsibility concerning energy-related issues.	Consistent	The project would not prevent the ability of the County to work with other agencies to define energy-related issues.
<b>1.10 General Provisions</b>		
<b>1.10.1 Public Services and Facilities</b>		
<b>Policy 9</b> New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.	Consistent with implementation of Mitigation Measures MM 3.13-1a, MM 3.9-6a, MM 3.13-1b, and MM 3.9-8b.	See 1.4, Public Facilities and Services, Goal 1, above. Public service impacts are evaluated in Section 3.13, <i>Public Services</i> . This EIS/EIR serves to comply with this policy.
<b>Policy 15</b> Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act documents, staff analysis, and the operator, that adequate public or private services and resources are available to serve the proposed development.	Consistent	See 1.4, Public Facilities and Services, Goal 1, above. Public service impacts are evaluated in Section 3.13, <i>Public Services</i> . This EIS/EIR serves to comply with this policy.
<b>Policy 16</b> 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 with implementation of Mitigation Measures MM 3.13-1a, MM 3.9-6a, MM 3.13-1b, and MM 3.9-8b.	See 1.4, Public Facilities and Services, Goal 1, above. Public service impacts are evaluated in Section 3.13, <i>Public Services</i> . This EIS/EIR serves to comply with this policy.

**TABLE 3.11-3  
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Policies	Consistency Determination	Project Consistency
<b>1.10.2 Air Quality</b>		
<p><b>Policy 19</b> 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"> <li>a. All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and</li> <li>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.</li> </ul>	<p>Consistent with implementation of Mitigation Measures MM 3.3-1a to MM 3.3-9a and MM 3.3-1b to MM 3.3-6b.</p>	<p>Air quality impacts are evaluated in Section 3.3, <i>Air Quality</i>. This EIS/EIR serves to comply with this policy. The proposed project would implement feasible Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the project and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project, in order to further reduce emission during construction and operation. Prior to consideration by the Kern County Planning Commission and Board of Supervisors, the significant and unavoidable cumulative air quality impacts identified in Section 3.3, <i>Air Quality</i>, will be discussed in a statement of overriding considerations pursuant to Sections 15043 and 15093 of the CEQA Guidelines.</p>
<p><b>Policy 21</b> The County shall support air districts' efforts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.3-1 to 3.3-4</p>	<p>Air quality impacts are evaluated in Section 3.3, <i>Air Quality</i>. As discussed in that section, implementation of Mitigation Measures MM 3.3-1a through 3.3-9a for the solar facility portion of the project and MM 3.3-1b through 3.3-6b for the gen-tie portion of the project, would further reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions during construction and operation.</p>
<b>1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation</b>		
<p><b>Policy 25</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.6-1a to MM 3.6-11a and MM 3.6-1b to MM 3.6-8b.</p>	<p>Cultural resource impacts are evaluated in Section 3.6, <i>Cultural and Paleontological Resources</i>. This EIS/EIR serves to comply with this policy with mitigation measures to promote the preservation of cultural and historic resources where necessary.</p>

**TABLE 3.11-3  
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Policies	Consistency Determination	Project Consistency
<b>1.10.5 Threatened and Endangered Species</b>		
<p><b>Policy 27</b> 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 3.5-1a to MM 3.5-13a and MM 3.5-1b to MM 3.5-15b.</p>	<p>Biological resource impacts are evaluated in Section 3.5, <i>Biological Resources</i>. This EIS/EIR serves to comply with this policy and reduce potential impacts with mitigation. Additionally, the proposed project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.</p>
<p><b>Policy 28</b> 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 with implementation of Mitigation Measures MM 3.5-1a to MM 3.5-13a and MM 3.5-1b to MM 3.5-15b.</p>	<p>Biological Resource impacts are evaluated in Section 3.5, <i>Biological Resources</i>. This EIS/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 were being gathered. Specifically, the NOP was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIS/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><b>Policy 31</b> 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 with implementation of Mitigation Measures MM 3.5-1a to MM 3.5-13a and MM 3.5-1b to MM 3.5-15b.</p>	<p>Solicitation to CDFW and U.S. Fish and Wildlife Service is discussed in Section 3.5, <i>Biological Resources</i>. This EIS/EIR serves to comply with this policy.</p>

**TABLE 3.11-3  
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<b>Policies</b>	<b>Consistency Determination</b>	<b>Project Consistency</b>
<p><b>Policy 32</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.5-1a to MM 3.5-13a and MM 3.5-1b to MM 3.5-15b.</p>	<p>Section 3.5, <i>Biological Resources</i>, evaluates potential impacts to riparian habits. There is no riparian habitat located within the Alternative A site. Sensitive habitats present include Joshua tree woodlands and wildlife movement corridors, both of which may be directly and indirectly affected by the proposed project. However, should the CDFW or RWQCB determine that onsite water features are jurisdictional; Mitigation Measures MM 3.5-1a through MM 3.5-13a for the solar facility portion of the project and Mitigation Measures MM 3.5-1b through 3.5-15b for the gen-tie portion of the project would serve to protect CDFW jurisdictional waters and otherwise sensitive habitats through biological monitoring, worker environmental awareness training and education, and avoidance of resources.</p>
<b>1.10.6 Surface Water and Groundwater</b>		
<p><b>Policy 43</b> Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.</p>	<p>Consistent</p>	<p>Drainage plans and associated impacts are discussed in Section 3.17, <i>Hydrology and Water Quality</i>, of this EIS/EIR. Consistent with this policy, final designs of the project would be required to conform to the Kern County Development Standards and Grading Ordinance during construction and decommissioning. This would be confirmed during final plot plan review by the Kern County Planning and Community Development Department.</p>
<p><b>Policy 44</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.16-1a to MM 3.16-4a and MM 3.16-1b to MM 3.16-4b</p>	<p>Please refer to Section 3.17, <i>Hydrology and Water Quality</i>, for a complete discussion potential watershed impacts resulting from the proposed action.</p>

**TABLE 3.11-3  
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<b>Policies</b>	<b>Consistency Determination</b>	<b>Project Consistency</b>
<b>1.10.7 Light and Glare</b>		
<b>Policy 47</b> Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measures MM 3.1-1a and MM 3.1-1b.	Aesthetic impacts are evaluated in Section 3.1, <i>Aesthetics</i> . The proposed solar facility site would have no onsite lighting and none of the streets bordering the site have lighting. There is minimal offsite lighting beyond small fixtures for individual structures. Thus, with the implementation of Mitigation Measures MM 3.1-1a for the solar facility portion of the project site, and Mitigation Measure MM 3.1-1b for the gen-tie portion of the site, the proposed project is consistent with this policy.
<b>Policy 48</b> Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures MM 3.1-1a and MM 3.1-1b.	See 1.10.7, Light and Glare, Policy 47, above. Light and glare are analyzed in Section 3.1, <i>Aesthetics</i> . This EIS/EIR serves to comply with this policy.
<b>Chapter 2 Circulation Element</b>		
<b>2.5.2 Airport Land Use Compatibility Plan</b>		
<b>Goal 1</b> Plan for land uses that are compatible with public airport and military bases and mitigate encroachment issues.	Consistent	As discussed in the Kern County Airport Land Use Compatibility section (see Section 3.11.3.1), the project would comply with the ALUCP policies related to public airports and military bases.
<b>Policy 2</b> To the extent legally allowable, prevent encroachment on public airport and military base operations from incompatible, unmitigated land uses.	Consistent	See 2.5.2 ALUCP Goal 1, above.
<b>Chapter 3 Noise Element</b>		
<b>Goal 1</b> 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 3.12-1a and MM 3.12-1b	Noise impacts, sensitive receptors and County thresholds are evaluated in Section 3.12, <i>Noise</i> . Due to the distance of Edwards AFB runways, the lack of habitable structures and the nearness of preexisting sensitive uses, the noise impacts of Edwards AFB on the proposed project site during construction would be minimal. During operation the project would have no impact on surrounding land uses.

**TABLE 3.11-3  
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Policies	Consistency Determination	Project Consistency
<p><b>Policy 1</b> Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.12-1a and MM 3.12-1b</p>	<p>See Chapter 3, Noise Element, Goal 1, above. Noise-sensitive land uses are evaluated in Section 3.12, <i>Noise</i>. This EIS/EIR serves to comply with this policy.</p>
<p><b>Policy 2</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.12-1a and MM 3.12-1b</p>	<p>See Chapter 3, Noise Element, Goal 1, above. Noise level criteria for all land uses are evaluated in Section 3.12, <i>Noise</i>. This EIR serves to comply with this policy.</p>
<p><b>Policy 4</b> Utilize good land use planning principles to reduce conflicts related to noise emissions.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.12-1a and MM 3.12-1b</p>	<p>Noise impacts, sensitive receptors, and County thresholds are evaluated in Section 3.12, <i>Noise</i>. Due to the distance of Edwards AFB runways, the lack of habitable structures at the solar facility site and the nearness of existing sensitive uses, the noise impacts of Edwards AFB on the proposed project site would be minimal. With implementation of Mitigation Measure MM 3.12-1, cumulative impacts related to excessive noise levels would not be substantial enough to disrupt or otherwise adversely affect sensitive receptors. The project would not conflict with surrounding land uses.</p>
<p><b>Policy 5</b> 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:</p> <ul style="list-style-type: none"> <li>a. 65 dB-Ldn or less in outdoor activity areas.</li> <li>b. 45 dB-Ldn or less within living spaces or other noise sensitive interior spaces.</li> </ul>	<p>Consistent with implementation of Mitigation Measures MM 3.12-1a and MM 3.12-1b</p>	<p>See Chapter 3, Noise Element, Goal 1, above. Noise levels are evaluated in Section 3.12, <i>Noise</i>. The project is not a noise-sensitive land use. See the Project Consistency discussion under Policy 4. This EIS/EIR serves to comply with this policy.</p>

**TABLE 3.11-3  
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<b>Policies</b>	<b>Consistency Determination</b>	<b>Project Consistency</b>
<b>Policy 7</b> Employ the best available methods of noise control.	Consistent with implementation of Mitigation Measures MM 3.12-1a, MM 3.12-2a, MM 3.12-1b, and MM 3.12-2b	See Chapter 3, Noise Element, Goal 1, above. Noise control methods are discussed in Section 3.12, <i>Noise</i> .
<b>Chapter 4 Safety Element</b>		
<b>Goal 1</b> Minimize injuries and loss of life and reduce property damage.	Consistent	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 as discussed in Section 3.9, <i>Hazardous Materials and Safety</i> .
<b>Policy 1</b> Require discretionary projects to assess impacts on emergency services and facilities.	Consistent	Impacts on emergency services and facilities are discussed in Section 3.13, <i>Public Services</i> .
<b>Policy 2</b> The County will encourage the promotion of public education about fire safety at home and in the work place.	Consistent with implementation of Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.9-8a, and MM 3.9-8b	The proposed project would not interfere or prohibit the County's ability to meet this policy. See Section 3.9, <i>Hazardous Materials and Safety</i> , MM 3.9-1a for the solar facility portion of the project and MM 3.9-1b for the gen-tie portion of the project, requires the operator to develop a hazardous materials business plan which would establish public notification procedures for spills and other emergencies, including fire. Mitigation Measures MM 3.9-8a for the solar facility portion of the project and MM 3.9-8b for the gen-tie portion of the project, requires the developer to post fire rules on the project bulletin board at the contractor's field office and areas visible to employees.

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Policies	Consistency Determination	Project Consistency
<p><b>Policy 3</b> The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.</p>	<p>Consistent with implementation of the Kern County Wildland Fire Management Plan, Section 3.11.5.1, and Mitigation Measures MM 3.13-1a, MM 3.9-6a, MM 3.13-1b, and MM 3.9-8b.</p>	<p>See Section 3.9, <i>Hazardous Materials and Safety</i>. The Kern County Wildland Fire Management Plan documents the assessment of wildland fire situations throughout the State Responsibility Areas within the County. As discussed in Section 3.11.5.1, the proposed solar facility and gen-tie line would be constructed outside of any areas identified as High or Very High Severity Fire Severity Zones. All project components would be located within a Moderate Fire Hazard Severity Zone as identified by the CAL FIRE State and Local Responsibility Maps. Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. The proposed project would comply with all applicable wildland fire management plans and policies established by CAL FIRE and the Kern County Fire Department See Section 3.13, <i>Public Services</i>: Mitigation Measure MM 3.13-1 outlines a methodology to reduce impacts to public services, including the responsibility of the developer to pay for impacts to fire services. Mitigation Measure MM 3.13-2 requires the developer to develop and implement a fire safety plan for use during construction and operation.</p>
<p><b>Policy 4</b> 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 Measures MM 3.9-8a, 3.9-6b, and Impact 3.15-4</p>	<p>The project would comply with all applicable wildland fire management plans and policies. See Section 3.9, <i>Hazardous Materials and Safety</i>: Mitigation Measure MM 3.9-8a for the solar facility portion of the project and Mitigation Measure MM 3.9-6b for the gen-tie portion of the project, requires the developer to develop and implement a fire safety plan, including maps of the project site and access roads, for use during constructional operation. See Section 3.15, <i>Transportation</i>: Impact 3.15-4: the project site is located in a rural area with roadways allowing adequate egress/ingress to the site in the event of an emergency. As part of the proposed project, additional internal access roads would be constructed.</p>
<p><b>Policy 5</b> 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 Measures MM 3.9-8a and MM 3.9-6b</p>	<p>See Section 3.9, <i>Hazardous Materials and Safety</i>: as discussed in Mitigation Measure MM 3.9-8a for the solar facility portion of the project and Mitigation Measure MM 3.9-6b for the gen-tie portion of the project, the developer would develop and implement a fire safety plan for use during construction and operation. This plan would address the marking of roads, and would comply with the General Plan.</p>

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<p><b>Policy 6</b> All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.13-1a, MM 3.13-1b, MM 3.9-8a, and MM 3.9-6b</p>	<p>See Section 3.9, <i>Hazardous Materials and Safety</i>, and Section 3.13, <i>Public Services</i>. 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 as outlined in Mitigation Measures MM 3.13-1a for the solar facility portion of the project and MM 3.13-1b for the gen-tie portion of the project. As discussed in Mitigation Measure MM 3.9-8a for the solar facility portion of the project and Mitigation Measure MM 3.9-6b for the gen-tie portion of the project, the developer is required to submit a fire safety plan to the Kern County Fire Department for review and approval prior to the issuance of any building permit or grading permits.</p>
<p><b>Chapter 5 Energy Element</b></p>		
<p><b>5.4.5 Solar Energy Development</b></p>		
<p><b>Goal 1</b> 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 greater than 100 MW of solar energy. The project would be located on undeveloped land and near existing roadways. The location of the project would ensure a safe and orderly development of the solar facility and gen-tie line.</p>
<p><b>Policy 1</b> The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.</p>	<p>Consistent</p>	<p>Consistent with this policy, the proposed project would develop a solar PV facility capable of generating greater than 100 MW of solar energy and offset an equivalent amount of fossil fuel-generated electrical power in the desert region of Kern County.</p>
<p><b>Policy 3</b> 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.</p>	<p>Consistent</p>	<p>Consistent with this policy, the project proposes the development of a PV power-generating facility in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and 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. See Section 3.9, <i>Hazardous Materials and Safety</i>.</p>

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<p><b>Policy 4</b> 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.</p>	<p>Consistent with implementation of Mitigation Measures MM 3.5-1a to MM 3.5-13a and MM 3.5-1b to MM 3.5-15b.</p>	<p>Consistent with this policy, the project proposes the development of a PV power generation facility in the desert region of Kern County. As discussed in Section 3.5, <i>Biological Resources</i>, potential impacts to biological resources could be reduced to less than significant levels with implementation of mitigation.</p>
<p><b>5.4.7 Transmission Lines</b></p>		
<p><b>Goal 1</b> 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>During final review of the proposed project, the Kern County Planning and Community Development Department, will determine which of the proposed gen-tie route options would minimize potential adverse environmental effect. The proposed gen-tie route options adhere to all applicable local, state, and federal regulations.</p>
<p><b>Policy 1</b> 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 would develop a PV facility that would develop new transmission lines and access the County's generating resources. Final review of the proposed project by the Kern County Planning and 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>
<p><b>Policy 2</b> 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, Transmission Lines, Policy 1, above.</p>
<p><b>Policy 3</b> 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, Transmission Lines, Policy 1, above.</p>
<p><b>Policy 4</b> The County should work with other agencies in establishing routes for proposed transmission lines.</p>	<p>Consistent</p>	<p>Consistent with this policy, the proposed project would require coordination with SCE and/or LADWP to connect into existing facilities.</p>

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

<b>Policies</b>	<b>Consistency Determination</b>	<b>Project Consistency</b>
<b>Policy 5</b> The County should discourage the siting of above-ground transmission lines in visually sensitive areas.	Consistent	See 5.4.7, Transmission Lines, Policy 1, above. The proposed project includes gen-tie lines that would have a significant impact on visual resources within the project area. As evaluated in 3.1, <i>Aesthetics</i> , there are several impacts to visually sensitive areas KOPs 1-3. However, during final review of the proposed project, the Kern County Planning and Natural Resources Department, would determine which of the proposed gen-tie route options would minimize potential adverse environmental effects including within visually sensitive areas. This would allow the County to discourage the siting of transmission lines in visually sensitive areas as feasible.
<b>Mojave Specific Plan (where goals and policies differ substantively from the Kern County General Plan)</b>		
<b>Chapter 3 Land Use Element</b>		
<b>Policy 3.6.5:</b> Ensure that future electricity demand projections for the Mojave area account for increases proposed in the Specific Plan, and work with Southern California Edison to modify and improve the electric power delivery system as the area grows.	Consistent	Consistent with this policy, the project proposes the development of a PV power-generating facility and would require coordination with SCE.
<b>Chapter 4 Conservation Element</b>		
<b>Policy 4.4.4:</b> Encourage the preservation of Joshua trees, Joshua tree woodland, known wildflower displays or other biologically sensitive flora determined during biological surveys.	Consistent (Mitigation Measures MM 3.5-4a, MM 3.5-13a, MM 3.5-14b and MM 3.5-15b)	The proposed project construction would have a less than significant impact on Joshua trees and Joshua tree woodland with implementation of Mitigation Measure MM 3.5-4a Vegetation Salvage Plan, and MM 3.5-13a for the Solar Facility portion of the site, as well as MM 3.5-14b and MM 3.15b for the gen-tie portion of the project.
<b>South of Mojave-Elephant Butte Specific Plan (where goals and policies differ substantively from the Kern County General Plan)</b>		
<b>A. Land Use Element</b>		
<b>3. Industry:</b> Compliance with the requirements of the California Health and Safety Code and the Kern County Health Department with regard to extraction and processing mineral resources (noise and air quality) or cessation of such operations (covering or fencing of openings).	Consistent	There are active mines and petroleum facilities located near the project site; however, the proposed project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources.

**TABLE 3.11-3  
CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

<b>Policies</b>	<b>Consistency Determination</b>	<b>Project Consistency</b>
<p><b>4. Open Space:</b> The Public Lands (BLM) surrounding and within the Plan area provide existing open space. This land should be retained in public ownership in perpetuity. All existing drainage channels should be left in a natural state, except in areas where existing residential lots would be subject to inundation, and retained as permanent open space. The city of Los Angeles transmission line should be jointly utilized as open space in accordance with the requirements of the city of Los Angeles. All private lands with a natural grade cross slope of 40 percent or greater should be preserved as open space until provisions have been made to completely sewer such private lands.</p>	Consistent	While the proposed project would result in loss of open space, it does not include the use of BLM land or open space surrounding the city of Los Angeles transmission lines or private lands with a natural grade cross sloped 40 percent or greater. The project would maintain consistency with the goals and policies of the Kern County General Plan and related Specific Plans.
<p><b>5. Agricultural:</b> Compliance with existing Zoning Ordinance</p>	Consistent	Consistent with this policy, the proposed project does not conflict with agricultural zoning.
<b>E. Open Space</b>		
<p><b>4. Scenic Lands:</b> All possible safeguards should be made to protect the scenic lands along SR 14, designated as a proposed Scenic Highway, and other County Highways.</p>	Consistent with implementation of Mitigation Measures MM 3.1-1a to MM 3.1-3a and MM 3.1-1b to MM 3.1-3b.	The gen-tie line would cross over State Route (SR) 14 and would be visible to residences and motorists. The portion of SR 14 that is eligible for scenic highway designation is between Mojave and the intersection of US 395, which is located approximately 4 miles north of the solar facility site and 2.8 miles east of the easternmost gen-tie route option. Additionally, the portion of SR 58 eligible for scenic highway status is between the intersection of SR 14 and I-15 near Barstow and approximately 3.2 miles north of the gen-tie route options. With implementation of Mitigation Measures MM 3.1-1a to MM 3.1-3a for the solar facility portion of the project and Mitigation Measures MM 3.1-1b to MM 3.1-3b for the gen-tie portion of the project, the proposed project would maintain consistency with goals and policies of the Kern County General Plan and related specific plans.

**TABLE 3.11-3  
 CONSISTENCY ANALYSIS WITH THE KERN COUNTY GENERAL PLAN, THE MOJAVE SPECIFIC PLAN, THE SOUTH OF MOJAVE-ELEPHANT BUTTE SPECIFIC PLAN, THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN, AND THE ACTIS INTERIM RURAL SPECIFIC PLAN MAP COMMUNITY PLAN GOALS AND POLICIES FOR LAND USE**

Policies	Consistency Determination	Project Consistency
<b>West Edwards Road Settlement Specific Plan (where goals and policies differ substantively from the Kern County General Plan)</b>		
<b><i>Land Use, Open Space, and Conservation Element</i></b>		
<b>Goal 1.6.1:</b> Promote conservation of the natural resources within the West Edwards Road Settlement (WERS) area.	Consistent	The project proposes the development of a PV power-generating facility designed to produce greater than 100 MW of solar power. The proposed gen-tie line would be constructed within the WERS area with no impact to natural resources.
<b>Policy 2:</b> Preservation of Lookout Hill from any development will be encouraged.	Consistent	The proposed project does not include development of Lookout Hill.
<b><i>Safety Element</i></b>		
<b>Policy 9:</b> Should any area within WERS be exposed to a noise level of 65 dB or greater, it should be designated as a noise sensitive area.	Consistent	Noise levels are evaluated in Section 3.12, <i>Noise</i> . Due to the distance of Edwards AFB runways, the lack of habitable structures and the nearness of preexisting sensitive uses, the noise impacts to WERS on the proposed project site during construction would be minimal, During operation the project would have no impact on surrounding land uses.
<b>Actis Interim Rural Specific Plan Map (where goals and policies differ substantively from the Kern County General Plan)</b>		
<b>No applicable policies.</b>		

1

## 3.12 Noise

### 3.12.1 Affected Environment

This section of the EIS/EIR describes the affected environment for noise in the proposed project area, including the regulatory and environmental setting.

The analysis in this section is based on the Acoustical Assessment for the Oro Verde Solar Project, prepared by RBF Consulting, dated December 3, 2013, the Noise Assessment Technical Report for the Gen-Tie Routes for Edwards Air Force Base (AFB) Solar Enhanced Use Lease (EUL) Project, prepared by Dudek, dated October 2017 and the Edwards Air Force Base Solar Project Update to Ambient Noise Measurements Memorandum, prepared by Dudek, dated February 16, 2018, which are provided in Appendix J of this EIS/EIR.

#### 3.12.1.1 Scoping Issues Addressed

No comments related to noise were received.

#### 3.12.1.2 Noise Background and Terminology

##### *Acoustical Terminology*

An understanding of the physical characteristics of sound is useful for evaluating environmental noise from the proposed project. This discussion considers the methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness, 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, sleep, and learning interference);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching

1 television, and telephone conversations, and interference with sleep. Sleep interference effects can  
2 include both awakening from sleep and arousal to a lesser state of sleep.

3 Sound is a physical phenomenon consisting of minute vibrations that travel through a medium,  
4 such as air, and are sensed by the human ear. Sound is generally characterized by several variables,  
5 including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured  
6 in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness).  
7 Because the range of sound pressures that occur in the environment is extremely wide, it is  
8 convenient to express these pressures on a logarithmic scale that compresses the wide range of  
9 pressures into a more useful range of numbers. The standard unit of sound measurement is the  
10 decibel (dB). Hz is a measure of how many times each second the crest of a sound pressure wave  
11 passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a  
12 given number of times per second. If the drum vibrates 100 times per second, it generates a sound  
13 pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain  
14 as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of  
15 sensitivity of the healthy human ear.

16 Sound levels are expressed by reference to a specified national/international standard. The sound  
17 pressure level is used to describe sound pressure (loudness) and is specified at a given distance or  
18 specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure  
19 (dB) is referenced to a value of 20 micropascals ( $\mu\text{Pa}$ ). Sound pressure level depends not only on  
20 the power of the source but also on the distance from the source to the receiver and the acoustical  
21 characteristics of the sound propagation path (absorption, reflection, etc.).

22 Outdoor sound levels decrease logarithmically as the distance from the source increases. This  
23 decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound  
24 radiating from a source in a homogeneous and undisturbed manner travels in spherical waves. As  
25 the sound waves travel away from the source, the sound energy is dispersed over a greater area,  
26 decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point  
27 source reduces the noise level at a rate of 6 dB per doubling of distance.

28 Atmospheric absorption also influences the sound levels received by an observer; the greater the  
29 distance traveled, the greater the influence of the atmosphere and the resultant fluctuations.  
30 Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of  
31 absorption varies depending on the frequency of the sound as well as the humidity and temperature  
32 of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high  
33 humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries  
34 farther) than higher frequencies. Over long distances, lower frequencies become dominant as the  
35 higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other  
36 atmospheric phenomena also play a significant role in determining the degree of attenuation. For  
37 example, certain conditions, such as temperature inversions, can channel or focus the sound waves,  
38 resulting in higher noise levels than would result from simple spherical spreading.

39 Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the  
40 environment do not consist of a single frequency. Instead, they are a broad band of many

1 frequencies differing in sound level. Because of the broad range of audible frequencies, methods  
2 have been developed to quantify these values into a single number representative of human hearing.  
3 The most common method used to quantify environmental sounds consists of evaluating all  
4 frequencies of a sound according to a weighting system that is reflective of human hearing  
5 characteristics. Human hearing is less sensitive at low frequencies and extremely high frequencies  
6 than at the midrange frequencies. This process is termed “A weighting,” and the resulting dB level  
7 is termed the “A-weighted” decibel (dBA).

8 Because A-weighting is designed to emulate the frequency response characteristics of the human  
9 ear and reflect the way people perceive sounds, it is widely used in local noise ordinances and state  
10 and federal guidelines, including those of the State of California and Kern County. Unless  
11 specifically noted, the use of A-weighting is always assumed with respect to environmental sound  
12 and community noise, even if the notation does not include the “A.”

13 In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and is  
14 barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the  
15 reference level against which the amplitude of other sounds is compared. Normal speech has a  
16 sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as  
17 discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative  
18 sound levels than absolute sound levels. The minimum change in the sound level of individual  
19 events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily  
20 perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the  
21 average person as a doubling (or halving) of the sound’s loudness.

22 Because of the logarithmic nature of the decibel, sound levels cannot be added or subtracted  
23 directly. However, some simple rules are useful in dealing with sound levels. First, if a sound’s  
24 acoustical energy is doubled, the sound level increases by 3 dBA, regardless of the initial sound  
25 level (e.g., 60 dBA + 60 dBA = 63 dBA; 80 dBA + 80 dBA = 83 dBA). An increase of 10 dBA is  
26 required to double the perceived loudness of a sound, and a doubling or halving of the acoustical  
27 energy (a 3 dBA difference) is at the lower limit of readily perceived change.

28 Although dBA may adequately indicate the level of environmental noise at any instant in time,  
29 community noise levels vary continuously. Most ambient environmental noise includes a mixture  
30 of noise from nearby and distant sources that creates an ebb and flow of sound, including some  
31 identifiable sources plus a relatively steady background noise in which no particular source is  
32 identifiable. A single descriptor, termed the equivalent sound level (Leq), is used to describe sound  
33 that is constant or changing in level. Leq is the energy-mean dBA during a measured time interval.  
34 It is the “equivalent” sound level produced by a given constant source equal to the acoustic energy  
35 contained in the fluctuating sound level measured during the interval. In addition to the energy-  
36 average level, it is often desirable to know the acoustic range of the noise source being measured.  
37 This is accomplished through the maximum instantaneous (Lmax) and minimum instantaneous  
38 (Lmin) noise level indicators that represent the root-mean-square maximum and minimum noise  
39 levels measured during the monitoring interval. The Lmin value obtained for a particular  
40 monitoring location is often called the acoustic floor for that location.

1 To describe the time-varying character of environmental noise, the statistical or percentile noise  
 2 descriptors L10, L50, and L90 may be used, which represent the noise levels equaled or exceeded  
 3 during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound  
 4 levels associated with L10 typically describe transient or short-term events, L50 represents the  
 5 median sound level during the measurement interval, and L90 levels are typically used to describe  
 6 background noise conditions.

7 The Day-Night Average Sound Level (Ldn, or DNL) represents the average sound level for a 24-  
 8 hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period  
 9 (10:00 p.m. to 7:00 a.m.). The Ldn is the descriptor of choice and used by nearly all federal, state,  
 10 and local agencies throughout the United States to define acceptable land use compatibility with  
 11 respect to noise. Within the state of California, the Community Noise Equivalent Level (CNEL) is  
 12 sometimes used. CNEL is very similar to Ldn, except that an additional 5 dBA penalty is applied  
 13 to the evening hours (7:00 p.m. to 10:00 p.m.). Because of the time-of-day penalties associated  
 14 with the Ldn and CNEL descriptors, the Ldn or CNEL dBA value for a continuously operating  
 15 sound source during a 24-hour period will be numerically greater than the dBA value of the 24-  
 16 hour Leq. Thus, for a continuously operating noise source producing a constant noise level  
 17 operating for periods of 24 hours or more, the Ldn will be 6 dBA higher than the 24-hour Leq value.

18 **TABLE 3.12-1**  
 19 **COMMON NOISE METRICS**

Unit of Measure		Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7 p.m. to 10 p.m.) and a 10 dBA penalty for sleeping hours (10 p.m. to 7 a.m.).
Ldn	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10 p.m. and 7 a.m.
Leq	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The Leq 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 Leq may also be referred to as the average sound level.
Lmax	Maximum Noise Level	Lmax 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.
Lmin	Minimum Noise Level	Lmin 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.
L1, L10, L50, L90	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.

20

## 1 **Fundamentals of Environmental Noise**

2 Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear  
3 as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in  
4 decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure.  
5 Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per  
6 second or hertz. The normal frequency range of hearing for most people extends from about 20 to  
7 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the  
8 noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency  
9 spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how  
10 loud a noise level is to a human was developed. The frequency weighting, called “A” weighting, is  
11 typically used for quieter noise levels, which de-emphasizes the low-frequency components of the  
12 sound in a manner similar to the response of a human ear. This A-weighted sound level is called  
13 the “noise level” and is referenced in units of dBA.

14 Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA  
15 increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically  
16 noticed by the human ear (Caltrans, 1998). Changes from 3 to 5 dBA may be noticed by some  
17 individuals who are extremely sensitive to changes in noise. A 5 dBA increase is readily noticeable  
18 (EPA, 1974). The human ear perceives a 10 dBA increase in sound level as a doubling of the sound  
19 level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

20 An individual’s noise exposure occurs over a period of time; however, noise level is a measure of  
21 noise at a given instant in time. Community noise sources vary continuously, being the product of  
22 many noise sources at various distances, all of which constitute a relatively stable background or  
23 ambient noise environment. The background, or ambient, noise level gradually changes throughout  
24 a typical day, corresponding to distant noise sources such as traffic volume and changes in  
25 atmospheric conditions.

26 Noise levels are generally higher during the daytime and early evening when traffic (including  
27 airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced  
28 during night-time hours when background levels are generally lower can be potentially more  
29 conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic  
30 fluctuations experienced throughout the day and night, a concept termed “community noise  
31 equivalent level” (CNEL) was developed, wherein noise measurements are weighted, added, and  
32 averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence.  
33 A complete definition of CNEL is provided below.

34 Different types of measurements are used to characterize the time-varying nature of sound. These  
35 measurements include the equivalent sound level ( $L_{eq}$ ), the minimum and maximum sound levels  
36 ( $L_{min}$  and  $L_{max}$ ), percentile-exceeded sound levels ( $L_{xx}$ ), the day-night sound level ( $L_{dn}$ ), and  
37 the CNEL. Below are brief definitions of these measurements and other terminology used within  
38 this section.

- 1 • *Decibel (dB)* is a unitless measure of sound on a logarithmic scale, which indicates the  
2 squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The  
3 reference pressure is 20 micropascals.
- 4 • *A-weighted decibel (dBA)* is an overall frequency-weighted sound level in decibels that  
5 approximates the frequency response of the human ear.
- 6 • *Equivalent sound level (Leq)* is the constant level that, over a given time period, transmits  
7 the same amount of acoustic energy as the actual time-varying sound. Equivalent sound  
8 levels are the basis for both the Ldn and CNEL scales.
- 9 • *Maximum sound level (Lmax)* is the maximum sound level measured during the  
10 measurement period.
- 11 • *Minimum sound level (Lmin)* is the minimum sound level measured during the  
12 measurement period.
- 13 • *Percentile-exceeded sound level (Lxx)* is the sound level exceeded X% of a specific time  
14 period. L10 is the sound level exceeded 10% of the time.
- 15 • *Day-Night Average Sound Level (Ldn)* The County of Kern describes community noise  
16 levels in terms of the Ldn (as well as CNEL [see below]). The Ldn is a 24-hour average A-  
17 weighted sound level with a 10 dB penalty added to the nighttime hours from 10:00 p.m.  
18 to 7:00 a.m. The 10 dB penalty is applied to account for increased noise sensitivity during  
19 the nighttime hours.
- 20 • *Community Noise Equivalent Level (CNEL)* is the average equivalent A-weighted sound  
21 level during a 24-hour day. CNEL accounts for the increased noise sensitivity during the  
22 evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dB  
23 to the sound levels in the evening and 10 dB to the sound levels at night.

#### 24 **Exterior Noise Distance Attenuation**

25 Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group  
26 of construction vehicles and equipment working within a spatially limited area at a given time; and  
27 (2) line sources, such as a roadway with a large number of pass-by sources (i.e., motor vehicles).  
28 Sound generated by a point source typically diminishes (i.e., attenuates) at a rate of 6.0 dBA for  
29 each doubling of distance from the source to the receptor at acoustically “hard” sites and at a rate  
30 of 7.5 dBA for each doubling of distance from source to receptor at acoustically “soft” sites. Sound  
31 generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per  
32 doubling distance, for hard and soft sites, respectively. Sound levels can also be attenuated by  
33 human-made or natural barriers. For the purpose of a sound attenuation discussion, a “hard” or  
34 reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt  
35 or concrete ground surfaces, as well as very hard-packed soils. An acoustically “soft” or absorptive  
36 site is characteristic of unpaved loose soil or vegetated ground.

37 With respect to examples of this distance-attenuation relationship for exterior noise, a 60 dBA noise  
38 level measured at 50 feet from a transformer within a paved substation site would diminish to 54  
39 dBA at 100 feet from the source, and to 48 dBA at 200 feet from the source. This scenario is  
40 addressed by the point source attenuation for a hard site (6 dBA with each doubling of the distance).  
41 For the scenario where soft side conditions exist between the point source and receptor, represented  
42 by a corridor of vegetation or open ground along the substation perimeter, an attenuation rate of

1 7.5 dBA per doubling of distance would apply; the transformer noise measured as a 60 dBA noise  
 2 level at 50 feet would diminish to 52.5 dBA at 100 feet from the source and to 45 dBA at 200 feet  
 3 from the source, where soft ground with or without vegetation exists between the sound source and  
 4 the receptor location.

5 **Structural Noise Attenuation**

6 Sound levels can also be attenuated by man-made or natural barriers. Solid walls, berms, or elevation  
 7 differences typically reduce noise levels in the range of approximately 5 to 15 dBA (Caltrans 1998).  
 8 Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The  
 9 outside-to-inside noise attenuation provided by typical structures in California ranges between 17 to  
 10 30 dBA with open and closed windows, respectively, as shown in **Table 3.12-2**.

11 **TABLE 3.12-2**  
 12 **OUTSIDE-TO-INSIDE NOISE ATTENUATION (DBA)**

Building Type	Open Windows	Closed Windows <sup>1</sup>
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Offices/Hotels	17	25
Theaters	17	25

<sup>1</sup> As shown, structures with closed windows can attenuate exterior noise by a minimum of 25 to 30 dBA.  
 SOURCE: Transportation Research Board, National Research Council, 2000; Noise Assessment Technical  
 Report for the Gen-Tie Routes for Edwards Air Force Base (AFB) Solar Enhanced Use Lease (EUL) Project,  
 prepared by Dudek, dated October 2017.

13 **Fundamentals of Vibration**

14 Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or  
 15 acceleration. The response of humans to vibration is very complex. However, it is generally  
 16 accepted that human response is best approximated by the vibration velocity level associated with  
 17 the vibration occurrence.

18 Heavy equipment operation, including stationary equipment that produces substantial oscillation  
 19 or construction equipment that causes percussive action against the ground surface, may be  
 20 perceived by building occupants as perceptible vibration. It is also common for groundborne  
 21 vibration to cause windows, pictures on walls, or items on shelves to rattle. Although the perceived  
 22 vibration from such equipment operation can be intrusive to building occupants, the vibration is  
 23 seldom of sufficient magnitude to cause even minor cosmetic damage to buildings.

24 When evaluating human response, groundborne vibration is usually expressed in terms of root  
 25 mean square (RMS) vibration velocity. RMS is defined as the average of the squared amplitude of  
 26 the vibration signal. As for sound, it is common to express vibration amplitudes in terms of decibels  
 27 defined as:  $L_v = 20 \log (V_{rms}/V_{ref})$ , where  $V_{rms}$  is the RMS vibration velocity amplitude in  
 28 inches/second and  $V_{ref}$  is the decibel reference of  $1 \times 10^{-6}$  inches/second.

1 To avoid confusion with sound decibels, the abbreviation VdB is used for vibration decibels. The  
2 vibration threshold of perception for most people is around 65 VdB. Vibration levels in the 70 to  
3 75 VdB range are often noticeable but generally deemed acceptable, and levels in excess of 80 VdB  
4 are often considered unacceptable (FTA 2006).

5 When evaluating the response of buildings, groundborne vibration is typically expressed as peak  
6 particle velocity (PPV). This value represents the greatest instantaneous particle velocity during a  
7 given time interval, and applies to earth materials in contact with the structure of concern. The  
8 California Department of Transportation (Caltrans) (2004) uses a damage threshold of 0.2  
9 inches/second PPV for conventional buildings.

10 As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact*  
11 *Assessment* (FTA, 2006), groundborne vibration can be a serious concern for nearby neighbors of  
12 a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to  
13 be heard. In contrast to airborne noise, groundborne vibration is not a common environmental  
14 problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even  
15 in locations close to major roads. Some common sources of groundborne vibration are trains, buses  
16 on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy  
17 earth-moving equipment.

18 There are several different methods that are used to quantify vibration. The peak particle velocity  
19 (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most  
20 frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude  
21 is most frequently used to describe the effect of vibration on the human body. The RMS amplitude  
22 is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is  
23 commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms  
24 of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle  
25 velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 2006).  
26 The decibel notation acts to compress the range of numbers required to describe vibration.  
27 Typically, groundborne vibration generated by man-made activities attenuates rapidly with  
28 distance from the source of the vibration. Sensitive receptors for vibration include structures  
29 (especially older masonry structures), people (especially residents, the elderly, and sick), and  
30 vibration sensitive equipment.

31 The effects of groundborne vibration include movement of the building floors, rattling of windows,  
32 shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the  
33 vibration can cause damage to buildings. Building damage is not a factor for most projects, with  
34 the occasional exception of blasting and pile-driving during construction. Annoyance from  
35 vibration often occurs when the vibration levels exceed the threshold of perception by only a small  
36 margin. A vibration level that causes annoyance will be well below the damage threshold for normal  
37 buildings. The FTA measure of the threshold of architectural damage for conventional sensitive  
38 structures is 0.2 in/sec PPV (FTA, 2006).

39 In residential areas, the background vibration velocity level is usually around 50 VdB  
40 (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold

1 of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is  
2 considered to be the approximate dividing line between barely perceptible and distinctly perceptible  
3 levels for many people (FTA, 2006).

#### 4 **Health Effects of Noise**

5 Noise is known to have a number of different adverse effects on humans. Based upon these  
6 recognized adverse effects of noise, criteria have been established to help protect the public health  
7 and safety and prevent disruption of certain human activities. These criteria are based on effects of  
8 noise on people such as hearing loss (not generally associated with community noise),  
9 communication interference, sleep interference, physiological responses, and annoyance.

#### 10 **3.12.1.3 Sensitive Receptors**

11 Sensitive receptors are land uses that may be subject to stress and/or interference from excessive  
12 noise. The Noise Element of the Kern County General Plan identifies residences, schools, hospitals,  
13 parks, churches, and other similar land uses to be sensitive receptors. Industrial and commercial  
14 land uses are generally not considered sensitive to noise, with the exception of commercial lodging  
15 facilities. Land uses especially sensitive to vibration include concert halls, hospitals, libraries,  
16 vibration sensitive research operations, residential areas, schools, and offices.

#### 17 **3.12.1.4 Regulatory Framework**

##### 18 **Federal**

19 The Noise Control Act of 1972 establishes a national policy to promote an environment for all  
20 Americans to be free from noise that jeopardizes their health and welfare.

21 Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an  
22 Adequate Margin of Safety, commonly referenced as the “Levels Document,” establishes an Ldn  
23 of 55 dBA (“A-weighted decibel”) as the requisite level, with an adequate margin of safety, for  
24 areas of outdoor uses, including residences and recreation areas (EPA, 1974). This document  
25 identifies safe levels of environmental noise exposure without consideration of costs for achieving  
26 these levels or other potentially relevant considerations.

27 The Federal Energy Regulatory Commission Guidelines on Noise Emissions from Compressor  
28 Stations, Substations, and Transmission Lines, require that

29 *“the noise attributable to any new compressor stations, compression added to an existing*  
30 *station, or any modification, upgrade, or update of an existing station must not exceed a*  
31 *Ldn of 55 dBA (“A-weighted decibel”) at any preexisting noise-sensitive area (such as*  
32 *schools, hospitals, or residences).”*

33 This policy was adopted based on the USEPA-identified level of significance of 55 Ldn dBA.

##### 34 **Federal Highway Administration**

35 The purpose of the Federal Highway Administration (FHWA) Noise Abatement Procedure is to  
36 provide procedures for noise studies and noise abatement measures to help protect the public health  
37 and welfare, supply noise abatement criteria, and establish requirements for information to be given

1 to local officials for use in the planning and design of highways. It establishes five categories of  
2 noise-sensitive receptors and prescribes the use of the hourly Leq as the criterion metric for  
3 evaluating traffic noise impacts.

#### 4 **Department of Housing and Urban Development (HUD)**

5 The Department of Housing and Urban Development regulations set forth the following exterior  
6 noise standards for new home construction assisted or supported by the department:

- 7 • 65 Ldn or less – Acceptable
- 8 • 65 Ldn and < 75 Ldn – Normally unacceptable, appropriate sound attenuation measures  
9 must be provided
- 10 • 75 Ldn – Unacceptable

11 HUD’s regulations do not contain standards for interior noise levels. Rather a goal of 45 dBA is set  
12 forth, and attenuation requirement are gears to achieve that goal.

#### 13 **Occupational Safety and Health Administration**

14 The Occupational Safety and Health Administration (OSHA) Occupation Noise Exposure Hearing  
15 Conservation Amendment (Federal Register 48 [46], 9738-9785, 1983) stipulate that protection  
16 against the effects of noise exposure shall be provided for employees when sound levels exceed 90  
17 dBA over an 8 hour exposure period. Protection shall consist of feasible administrative or  
18 engineering controls. If such controls fail to reduce sound levels to within acceptable levels,  
19 personal protective equipment shall be provided and used to reduce exposure of the employee.  
20 Additionally, a Hearing Conservation Program must be instituted by the employers whenever  
21 employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average  
22 sound level of 85 dBA. The Hearing Conservation Program requirements consist of periodic area  
23 and personal noise monitoring, performance and evaluation of audiograms, provision of hearing  
24 protection, annual employee training, and record keeping.

#### 25 **State**

##### 26 **California Noise Control Act of 1973**

27 Sections 46000 through 46080 of the California Health and Safety Code, known as the California  
28 Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health  
29 and welfare and that exposure to certain levels of noise can result in physiological psychological,  
30 and economic damage. It also identifies a continuous and increasing bombardment of noise in the  
31 urban, suburban, and rural areas. The California Noise Control Act declares that the state of  
32 California has a responsibility to protect the health and welfare of its citizens by the control,  
33 prevention, and abatement of noise. It is the policy of the state to provide an environment for all  
34 Californians free from noise that jeopardizes their health or welfare.

##### 35 **California Environmental Quality Act (CEQA)**

36 CEQA requires that all environmental effects of a project be analyzed, including environmental  
37 noise. Under CEQA, a project has a potentially significant impact if the project exposes people to  
38 noise levels in excess of standards established in the local general plan or noise ordinance.

1 Additionally, under CEQA, a project has a potentially significant impact if the project creates a  
2 substantial increase in the ambient noise levels in the project vicinity above levels existing without  
3 the project. If a project has a significant impact, mitigation measures must be prescribed.

#### 4 **Local**

##### 5 **Kern County General Plan**

6 The Noise Element of the General Plan is a mandatory element as required by California  
7 Government Code Section 65302 (f). The state requires that local jurisdictions prepare statements  
8 of policy indicating their intentions regarding noise and noise sources, establish desired maximum  
9 noise levels according to land use categories, set standards for noise emission from transportation  
10 and fixed-point sources, and prepare implementation measures to control noise. Noise elements are  
11 prepared in accordance with *Guidelines for the Preparation and Content of Noise Elements of the*  
12 *General Plan* published by the California Office of Noise Control in 1976.

13 The major purpose of the Noise Element of the Kern County General Plan is to establish reasonable  
14 standards for maximum desired noise levels in Kern County, and to develop an implementation  
15 program which could effectively mitigate potential noise problems. The implementation measures  
16 have been designed so that they will not subject residential or other noise-sensitive land uses to  
17 exterior noise levels in excess of 65 dBA Ldn, and interior noise levels in excess of 45 dBA Ldn.  
18 The Kern County General Plan contains additional policies, goals, and implementation measures  
19 that are more general in nature and not specific to development such as the Proposed Action. These  
20 measures are not listed below, but, as stated in Chapter 1, *Introduction*, all policies, goals, and  
21 implementation measures in the Kern County General Plan are incorporated by reference.

##### 22 **Kern County General Plan Chapter 3: Noise Element**

###### 23 Goal

24 Goal 1: Ensure that residents of Kern County are protected from excessive noise and that  
25 moderate levels of noise are maintained.

###### 26 Policies

27 Policy 1: Review discretionary industrial, commercial, or other noise-generating land use  
28 projects for compatibility with nearby noise-sensitive land uses.

29 Policy 2: Require noise level criteria applied to all categories of land uses to be consistent  
30 with the recommendations of the California Division of Occupational Safety and  
31 Health (DOSH).

32 Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise  
33 sources in order to increase absorption of noise.

34 Policy 4: Utilize good land use planning principles to reduce conflicts related to noise  
35 emissions.

36 Policy 6: Ensure that new development in the vicinity of airports will be compatible with  
37 existing and projected airport noise levels as set forth in the Airport Land Use  
38 Compatibility Plan (ALUCP).

39 Policy 7: Employ the best available methods of noise control.

1 Implementation Measures

2 Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use  
3 patterns.

4 Measure C: Review discretionary development plans, programs and proposals, including those  
5 initiated by both the public and private sectors, to ascertain and ensure their  
6 conformance to the policies outlined in this element.

7 Measure E: Review discretionary development plans to ensure compatibility with adopted  
8 Airport Land Use Compatibility Plans.

9 Measure F: Require proposed commercial and industrial uses or operations to be designed or  
10 arranged so that they will not subject residential or other noise sensitive land uses  
11 to exterior noise levels in excess of 65 dB Ldn and interior noise levels in excess  
12 of 45 dB Ldn.

13 Measure G: At the time of any discretionary approval, such as a request for a General Plan  
14 Amendment, zone change or subdivision, the developer may be required to submit  
15 an acoustical report indicating the means by which the developer proposes to  
16 comply with the noise standards. The acoustical report shall:

17 a) Be the responsibility of the applicant.

18 b) Be prepared by a qualified acoustical consultant experienced in the fields of  
19 environmental noise assessment and architectural acoustics.

20 c) Be subject to the review and approval of the Kern County Planning and Natural  
21 Resources Department and the Environmental Health Services Department. All  
22 recommendations therein shall be complied with prior to final approval of the  
23 project.

24 Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

25 a) Include representative noise level measurements with sufficient sampling  
26 periods and locations to adequately describe local conditions.

27 b) Include estimated noise levels for existing and projected future (10 – 20 years  
28 hence) conditions, with a comparison made to the adopted policies of the Noise  
29 Element.

30 c) Include recommendations for appropriate mitigation to achieve compliance with  
31 the adopted policies and standards of the Noise Element.

32 d) Include estimates of noise exposure after the prescribed mitigation measures  
33 have been implemented. If compliance with the adopted standards and policies of  
34 the Noise Element will not be achieved, a rationale for acceptance of the project  
35 must be provided.

36 Measure J: Develop implementation procedures to ensure that requirements imposed pursuant  
37 to the findings of an acoustical analysis are conducted as part of the project  
38 permitting process.

39 The Kern County General Plan Energy Element requires an acoustical analysis for energy project  
40 proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise  
41 Element of the General Plan.

1 **Kern County General Plan Chapter 5. Energy Element**

2 Policy

3 Policy 10: The County should require acoustical analysis for energy project proposals that  
4 might impact sensitive and highly-sensitive uses in accordance with the Noise  
5 Element of the General Plan.

6 The Kern County Noise Ordinance establishes acceptable hours of construction and limitations on  
7 construction-related noise impacts on adjacent sensitive receptors. Noise-producing construction  
8 activities that are audible to a person with average hearing ability at a distance of 150 feet from the  
9 construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling  
10 are prohibited between the hours of 9:00 p.m. and 6:00 a.m. on weekdays, and between 9:00 p.m.  
11 and 8:00 a.m. on weekends.

12 1. The Development Services Agency Director and his/her designated representative may for  
13 good cause exempt some construction work for a limited time.

14 2. Emergency work is exempt from this section.

15 The Kern County Airport Land Use Compatibility Plan includes an Air Installation Compatible  
16 Use Zones (AICUZ) study that establishes standards and guidelines that protect community safety  
17 and health, promote appropriate development in the vicinity of military airfields, and protect  
18 taxpayer's investment in national defense. Presently, base personnel are updating the present  
19 AICUZ study to reflect the ongoing changes at the installation. The AICUZ indicates the location  
20 of safety zones and noise impacts associated with the flying mission.

21 The Mojave Specific Plan guides development within and surrounding the Mojave community and  
22 works in tandem with the Kern County General Plan and Zoning Ordinance. The Mojave Specific  
23 Plan establishes policies to protect residents in the planning area from the harmful effects of  
24 excessive exposure to noise. The objectives and policies focus on minimizing the effects of  
25 transportation-related noise. For transportation noise sources (e.g., roadways, rail lines), the  
26 Mojave Specific Plan Noise Element establishes land use compatibility criteria of 65 dBA Ldn for  
27 exterior noise levels and 45 dBA Ldn for interior noise levels within "sensitive" land uses, which  
28 include residential areas.

29 The West Edwards Road Settlement Specific Plan states any land division map or other legal  
30 instrument of land division filed and recorded shall contain an information statement that the  
31 property is within the area of Edwards Flight Test Center Operations and may be subject to noise  
32 related to aircraft flight testing activities.

33 There are no goals, policies, or implementation measures within the South of Mojave -Elephant  
34 Butte Specific Plan that apply to Noise.

35 The Actis Interim Rural Community Plan Map area could potentially be affected by the project.

36 The Willow Springs Specific Plan (WSSP) defines the planning requirements of roughly 50,560  
37 acres within the County in order to ensure orderly development of the area. The WSSP includes  
38 goals, policies, and implementation measures that minimize disruption of the quality of life

1 resulting from excessive noise, including controlling noise emissions from new development to the  
2 standards of the Kern County General Plan Noise Element. The gen-tie alignments are located  
3 within the area covered by the WSSP. The WSSP establishes noise generation limits of 55 dBA  
4 Leq during the daytime, 45 dBA Leq during the daytime for residential areas, and a maximum  
5 transportation noise exposure level of 65 dBA CNEL.

### 6 **3.12.1.5 Environmental Setting**

7 This section describes the existing physical environmental conditions in the vicinity of the proposed  
8 solar facility site and the proposed gen-tie route options as they relate to the potential noise impacts  
9 of the proposed project.

#### 10 ***Sensitive Receptors***

11 The distance to sensitive receptors from the proposed project is measured from the exterior project  
12 boundary of the proposed solar facility site or from the proposed gen-tie line corridor only and not  
13 from individual construction areas within the interior of the solar facility site. There are no existing  
14 structures located on areas of the project site where development is proposed. Noise-sensitive land  
15 uses located in the vicinity of the proposed solar facility site are primarily rural residences located  
16 immediately north of the project site along East Trotter Avenue (approximately 100 feet to the  
17 north) and west of the site along Lone Butte Road (approximately 2,800 feet to the west). As  
18 discussed above, there are three options for the east-west gen-tie routes (Options A, B, and C) and  
19 two options for the north-south gen-tie routes (Options 1 and 2); therefore, the distance to sensitive  
20 receptors varies. As illustrated in **Table 3.12-3** and **Table 3.12-4**, the nearest residences to the  
21 alignments are from approximately 50 feet away, and these occur along North-South Gen-Tie  
22 Route Option 2. The nearest residence to North-South Gen-Tie Route Option 1 is at a distance of  
23 185 feet. The nearest residence to the East-West Gen-Tie Route is 1,195 feet away.

24  
25

**TABLE 3.12-3  
EAST-WEST GEN-TIE ROUTE OPTIONS SENSITIVE RECEPTORS**

Arizona Avenue	14 residences 1,440 to 2,600 feet north of alignment
Winchester Road	Approximately 100 residences 1,195 feet north of alignment

SOURCE: Dudek, 2017.

26

1  
2

**TABLE 3.12-4  
NORTH-SOUTH GEN-TIE ROUTE OPTIONS SENSITIVE RECEPTORS**

<b>North-South Gen-Tie Route Option 1 Sensitive Receptors</b>	
20 <sup>th</sup> Street	3 residences 925, 950, 1,725 feet west of alignment
15 <sup>th</sup> Street	11 residences 2,100 to 2,425 feet west of alignment
East Trotter Avenue	2 residences 185 and 525 feet west of alignment
<b>North-South Gen-Tie Route Option 2 Sensitive Receptors</b>	
Reed Avenue	4 residences 50 to 510 feet east of alignment
La Cita	1 residences 1,325 feet east of alignment
Lone Butte	2 residences – 175 and 225 feet east of alignment
	2 residences – 850 feet east of alignment
	3 residences – 50, 175, 200 feet east of alignment
	3 residences – 80, 90, 200 feet east of alignment
	1 residence – 140 feet southwest of alignment

SOURCE: Dudek, 2017.

3

4 ***Vibration-Sensitive Land Uses***

5 Land uses at which groundborne vibration could potentially interfere with operations or equipment,  
6 such as research, manufacturing, hospitals, and university research operations (FTA 2006) are  
7 considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that  
8 would be affected by the groundborne vibration. Excessive levels of groundborne vibration of  
9 either a regular or an intermittent nature can result in annoyance to residential uses. There are no  
10 known vibration-sensitive land uses within 10 miles of the project area.

11 ***Existing Noise Levels***

12 To quantify existing ambient noise levels in the area of the proposed solar facility site, Dudek  
13 conducted noise measurements on February 13, 2018. The noise measurement sites were  
14 representative of typical existing noise exposure within and immediately adjacent to the proposed  
15 solar facility site. Each measurement was conducted for a duration of 15 minutes. This duration  
16 was deemed appropriate given the rural setting of the project area and the fact that noise generating  
17 construction activities would be occurring during daytime hours. The sound monitoring location,  
18 times of the measurement, and existing ambient Leq, Lmin, and Lmax sound levels recorded for  
19 each monitoring location are provided in **Table 3.12-5**. The short-term monitoring locations  
20 (denoted as NM-#) are illustrated on **Figure 3.12-1**.

21

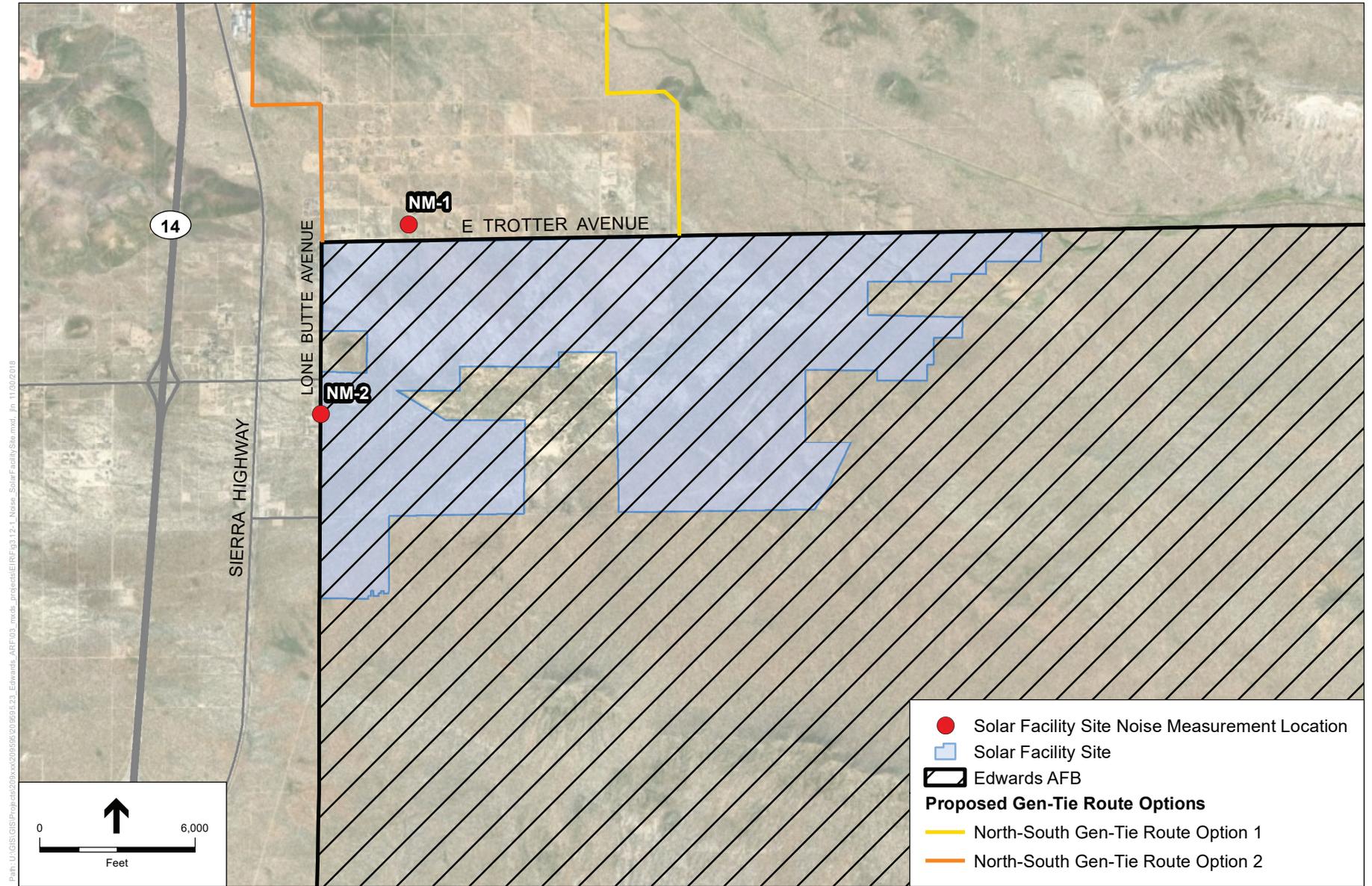


FIGURE 3.12-1: SOLAR FACILITY SITE NOISE MEASUREMENT LOCATIONS

1  
2

**TABLE 3.12-5  
NOISE MEASUREMENTS (PROPOSED SOLAR FACILITY AREA)**

Site	Location	Leq (dBA)	Lmin (dBA)	Lmax (dBA)	Date	Time
1	Near a single family home on the northeastern corner of the Fetters Street/Trotter Avenue intersection (near the northwestern boundary of the proposed solar facility site).	58.9	43.1	75.6	2/13/18	12:34 pm
2	Near a single-family home located along Lone Butte Road, west of the proposed solar facility site.	62.3	40.3	84.7	2/13/18	12:10 pm

dBA=A-weighted decibel; Leq=equivalent sound level; Lmax =maximum sound level; Lmin =minimum sound level.  
Peak (dB) reflects peak operating conditions and addresses the annoying aspects of intermittent noise.  
SOURCE: Dudek, 2018.

3

4 To quantify existing ambient noise levels in the area of the gen-tie line corridor, Dudek conducted  
5 noise measurements on June 14, 2017 and June 15, 2017. Two types of sound-level measurements  
6 were taken: two long-term measurements (24-hour duration) were performed in the general vicinity  
7 of North-South Gen-Tie Route Options 1 and 2, at locations removed from existing roadways; and  
8 three short-term (varying from 6 to 15 minutes) measurements were performed along the east-west  
9 gen-tie route, including one measurement adjacent to SR 14 which included manual traffic counts.  
10 Table 3.12-6 summarizes the existing ambient Lmin and Lmax sound levels recorded for each  
11 monitor location during the 24-hour measurement, as well as the calculated 24-hour weighted  
12 average noise level (Ldn).

13 The sound monitoring location, dates of the measurement, and sound sources affecting the  
14 monitoring location are also provided in **Table 3.12-6** for each monitor location. The long-term  
15 monitoring locations (denoted as LT#) are illustrated on **Figure 3.12-2**.

16  
17

**TABLE 3.12-6  
LONG-TERM NOISE MEASUREMENTS (PROPOSED GEN-TIE LINE CORRIDOR)**

Site	Location	Noise Sources	Dates	Ldn (dBA)	Lmax (dBA)	Lmin (dBA)
LT1	West of North-South Gen-Tie Option 1	Distant vehicular traffic on SR-58	6/14/17 6/15/17	64	64	38
LT1	West of North-South Gen-Tie Option 2	Distant vehicular traffic on SR-14	6/14/17 6/15/17	63	61	38

SOURCE: Dudek,2017.

18

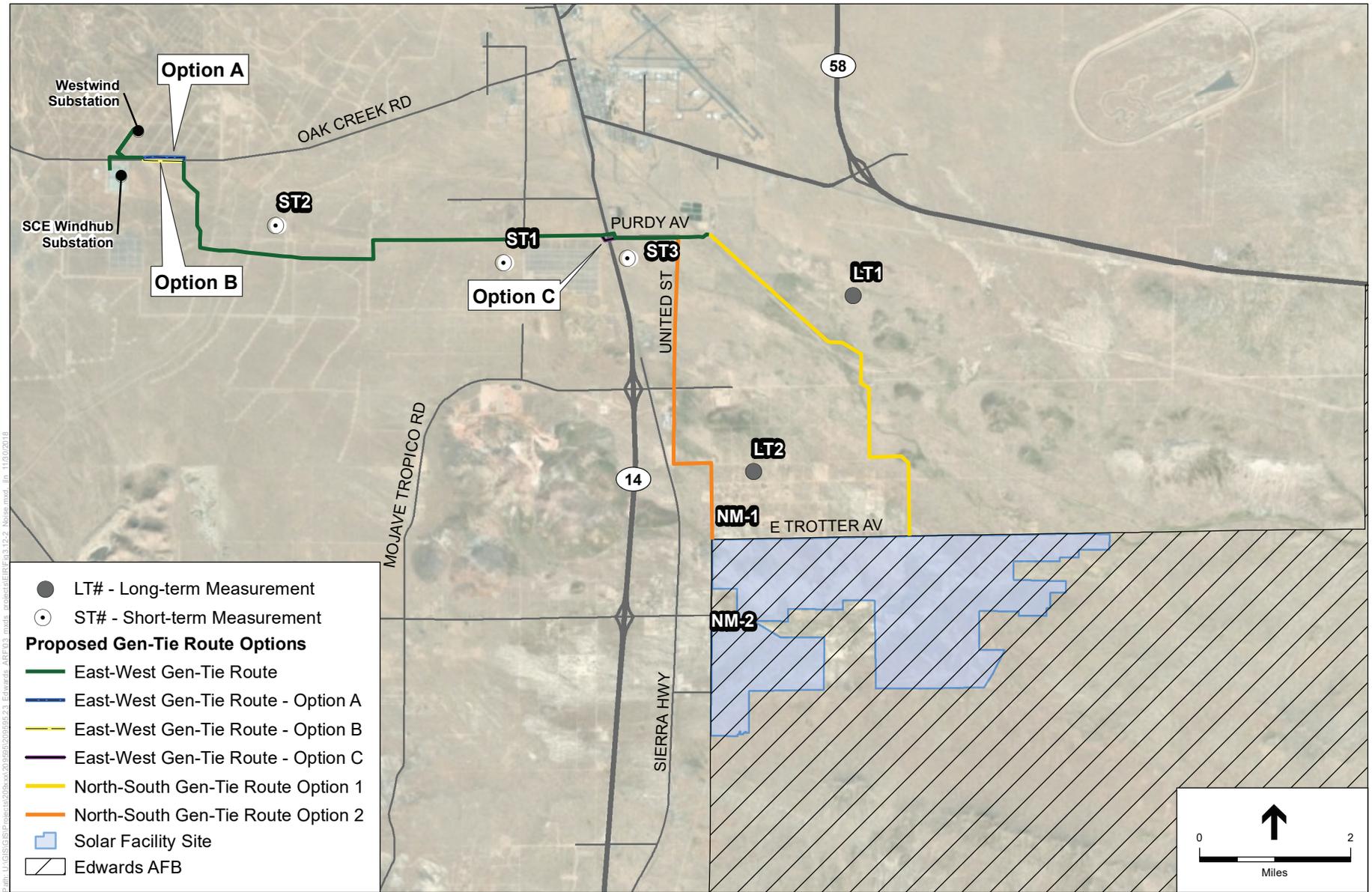


FIGURE 3.12-2: GEN-TIE LINE CORRIDOR NOISE MEASUREMENT LOCATIONS

1 The results of the ambient noise survey from long-term measurements reflect noise levels that range  
 2 between 63 and 64 dBA Ldn (or CNEL) in the general vicinity of North-South Gen-Tie Route  
 3 Options 1 and 2. The primary noise source contributing to the ambient noise environment was  
 4 traffic, despite the selection of noise monitor locations distant from principal roadways. SR-14 and  
 5 SR-58 are major roadways and contributors to the ambient noise environment in the vicinity of the  
 6 proposed gen-tie line corridor. As described previously, according to the Kern County General Plan  
 7 Noise Element, a sensitive receptor should not be exposed to noise levels exceeding 65 dBA Ldn  
 8 (or CNEL); since the gen-tie routes are located on land within the jurisdiction of the County, the  
 9 ambient noise levels recorded at each of the long-term monitor locations evidence existing noise  
 10 conditions that would be within acceptable levels for noise-sensitive receptors.

11 One important source of noise generation in the area of the proposed gen-tie line corridor are wind  
 12 turbines. The east-west gen-tie route passes through a sizable wind-energy generation facility and  
 13 would also cross SR-14. Further, the southern portion of North-South Gen-Tie Route Option 2 is  
 14 located proximate to SR-14. Short-term noise measurements were conducted within the wind-  
 15 energy generation facility along the east-west gen-tie route. A short-term noise measurement with  
 16 manual traffic counts was completed adjacent to SR-14 along the east-west gen-tie route. These  
 17 measurements are useful in characterizing ambient noise levels associated with the wind turbines  
 18 and along the major roadway within the proposed gen-tie line corridor. The results of these short-  
 19 term noise measurements are presented in **Table 3.12-7**. The short-term roadway noise  
 20 measurement locations (denoted as ST#) are illustrated on Figure 3-12-2.

21 **TABLE 3.12-7**  
 22 **SHORT-TERM NOISE MEASUREMENTS (PROPOSED GEN-TIE LINE CORRIDOR)**

ST#	Measurement Date	Measurement Time Period	Leq (dBA)	Lmax (dBA)	Lmin (dBA)	Remarks
1	6/14/2017	3:25-3:35	34	51	31	Purdy Road @ Holt Street, several turbines
2	6/14/2017	3:45-4:00	52	58	51	Purdy Road @ 54 <sup>th</sup> Street, many turbines
3	6/14/2017	4:30-4:36	75	82	59	SR-14 @ 50 feet from edge of pavement, 202 cars, 18 heavy trucks, 7 medium trucks

SOURCE: Dudek, 2017.

23  
 24 The highest recorded average noise level (75 dBA Leq) was associated with traffic on SR-14 at a  
 25 distance of approximately 50 feet from the edge of pavement. Based on an outdoor attenuation rate  
 26 of 4.5 dBA with a doubling of distance from a roadway soft site conditions), noise levels would  
 27 diminish to 65 dBA Leq at approximately 230 feet from the edge of pavement. The measurements  
 28 conducted within various areas of the existing wind-energy generation facility had average noise  
 29 levels ranging from 34 to 52 dBA Leq. With the exception of areas within 230 feet of SR-14, current  
 30 average noise levels in the proposed gen-tie line corridor would generally not exceed acceptable  
 31 levels for a sensitive receptor.

1 **3.12.2 Environmental Consequences**

2 This section of the EIS/EIR describes the environmental consequences related to noise for the  
3 proposed project. It describes the methods used to analyze the effects of the proposed project and  
4 lists the thresholds used to assess whether an effect would be significant.

5 **3.12.2.1 Assessment Methods/Methodology**

6 Noise impacts associated with the proposed project were assessed in this section based primarily  
7 on the Acoustical Assessment for the Oro Verde Solar Project (“RBF 2013”), the Noise Assessment  
8 Technical Report for the Gen-Tie Routes for Edwards Air Force Base (AFB) Solar Enhanced Use  
9 Lease (EUL) Project (“noise assessment” or “Dudek, 2017”) and the Edwards Air Force Base Solar  
10 Project Update to Ambient Noise Measurements Memorandum (“Dudek, 2018”). The complete  
11 reports are included in Appendix J of this EIS/EIR. The noise analysis for the Proposed Action  
12 includes potential noise and groundborne vibration impacts that may occur during construction,  
13 operation and maintenance, and decommissioning.

14 **3.12.2.2 Determination of Impacts/Thresholds of Significance**

15 For this analysis, an environmental impact was determined to be significant if it would result in any  
16 of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines  
17 Appendix G (14 CCR 15000 et seq.), and standards of professional practice. A project would have  
18 a significant impact related to noise if it would::

- 19 • Expose persons to or generate noise levels in excess of standards established in the local  
20 general plan or noise ordinance, or applicable standards of other agencies
- 21 • Expose persons to or generate excessive ground borne vibration or groundborne noise  
22 levels
- 23 • Result in a substantial permanent increase in ambient noise levels in the project vicinity  
24 above levels existing without the project
- 25 • Result in a substantial temporary or periodic increase in ambient noise levels in the project  
26 vicinity above levels existing without the project
- 27 • For a project located within the Kern County Airport Land Use Compatibility Plan, expose  
28 people residing or working in the project area to excessive noise levels
- 29 • For a project within the vicinity of a private airstrip, expose people residing or working in  
30 the project area to excessive noise levels

31 The County determined in the NOP (see Appendix A) that the following environmental issue areas  
32 would result in no impacts or less-than-significant impacts and therefore eliminated these issue  
33 areas from further review in this EIS/EIR:

- 34 • Result in a substantial permanent increase in ambient noise levels in the project vicinity  
35 above levels existing without the project
- 36 • For a project within the vicinity of a private airstrip, expose people residing or working in  
37 the project area to excessive noise levels

### 3.12.3 Analysis of Environmental Effects

#### 3.12.3.1 Alternative A: 4,000-Acres EUL (Preferred Alternative)

##### ***NEPA: Environmental Impacts***

##### **Construction**

Transportation of construction workers and construction equipment and materials would increase noise levels on surrounding roads. Construction worker commutes and the transport of construction equipment and materials to the proposed solar facility site would incrementally increase noise levels on access roads around the project site. It is anticipated that construction truck traffic would access the project site via Sierra Highway, Division Street, and Trotter Avenue.

Project-related construction vehicle noise levels were estimated by the developer of the previously proposed project at this site using the FHWA's Noise Prediction Model algorithms (Appendix B13) to characterize construction traffic noise conditions at the residences adjacent to East Trotter Avenue. The model uses Calveno<sup>1</sup> reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle trip volume, speed, distance to the receiver, and the acoustical characteristics of the site. The traffic noise was modeled assuming the average traffic speed along East Trotter Avenue would be approximately 25 miles per hour. The modeled traffic noise levels in terms of the hourly Leq at the nearest residences, which are located approximately 100 feet from the centerline of East Trotter Avenue, are 60 dBA associated with workers commuting to the project site during the peak hour, and 64 dBA associated with delivery truck trips (Appendix 13).

However, once the solar facility site is reached, the trucks would use internal roadways that would be further away from the existing receptors. Haul truck volumes associated with the proposed project would vary from day to day, with the highest volumes generally occurring during the earthwork and equipment delivery stages. Haul trucks associated with construction would occur within the allowable hours for construction specified in the Kern County Noise Ordinance (6:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends), since haul routes are located within County jurisdiction. Therefore, the Proposed Action would not result in adverse effects related to short-term noise increases associated with truck traffic increases on truck routes.

Construction of the proposed solar facility and gen-tie line corridor would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures.

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<sup>1</sup> California Vehicle Noise Reference Energy Mean Emission Levels.

1 It is anticipated that construction of the Proposed Action would take approximately two years.  
2 Construction of the proposed solar facility would include site preparation, PV system grading and  
3 installation, testing, and site cleanup work. Construction of the proposed gen-tie line corridor would  
4 involve clearing and grubbing of the existing vegetation at the pole locations; grading necessary  
5 for construction of dirt access roads, where necessary, and transmission pole foundations; and  
6 stringing of the transmission cable. Clearing of vegetation at a proposed pole location, and the  
7 construction of a foundation for the pole, would require approximately 2-3 construction days, with  
8 the erection of the pole requiring approximately one day. Access road construction to selected pole  
9 locations would require 1-2 days, as distance from existing roads would be very limited. Finally,  
10 stringing of the transmission line for any given gen-tie segment would likely occur in a single day.  
11 Compiled together, the construction activity for the gen-tie development would account for  
12 between approximately 4-6 days at any given pole location. Depending upon the average pole  
13 separation distance, any given residence might fall within 1,000 feet of active construction for up  
14 to 4-6 days out of the total gen-tie construction period.

15 Construction equipment for the solar facility would likely include graders, scrapers, backhoes,  
16 loaders, cranes, dozers, water trucks, portable generators and air-compressors, and miscellaneous  
17 trucks. Gen-tie construction would primarily involve backhoes, trucks, and light cranes. Noise from  
18 construction equipment generally exhibits point source acoustical characteristics. A point source  
19 sound is attenuated (i.e., is reduced) at a rate of 6 decibels per doubling of distance from the source  
20 for “hard site” conditions and at 7.5 decibels per doubling of distance for “soft site” conditions.  
21 The proposed solar facility and gen-tie line corridor are located in areas typically exhibiting soft  
22 site conditions, including dirt roads and open areas with native vegetation. These rules apply to the  
23 propagation of sound waves with no obstacles between source and receivers, such as topography  
24 (i.e., ridges or berms) or structures. The range of maximum noise levels for various types of  
25 construction equipment at a distance of 50 feet from a noise receptor is depicted in **Table 3.12-8**.  
26 A reasonable worst case assumption is that three pieces of equipment would operate simultaneously  
27 and continuously within a focused area. This worst case scenario resulting from composite  
28 construction noise is derived by adding the individual equipment noise levels logarithmically,  
29 which would result in a maximum level of 93 dBA at 50 feet from the source or 87 dBA (as  
30 estimated using equation N-2141.2 provided in the October 1998 Technical Noise Supplement  
31 prepared by Caltrans) at the location of the nearest sensitive receptor to the proposed solar facility  
32 site (100 feet from the project boundary). However, over the anticipated two-year construction  
33 period, the construction work would occur across the 4,000 acres of the project site and not  
34 continually at the project boundary nearest to the sensitive receptors.

35

1  
 2

**TABLE 3.12-8  
 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS**

<b>Equipment</b>	<b>Typical Sound Level (dB)                  – 50 feet from Source</b>
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

SOURCE: FTA 2006; Dudek, 2017.

3

4 With respect to gen-tie construction noise, as illustrated in Table 3.12-3 and Table 3.12-4, there are  
 5 several residences located at 50 feet from segments of the alignment of the proposed gen-tie line  
 6 options. However, there are no residences closer than 50 feet and many of the existing residences  
 7 are at much greater distances from the potential gen-tie alignments. As shown in Table 3.12-8, the  
 8 average noise levels at 50 feet for typical equipment would range up to 89 dB for the type of  
 9 equipment normally used for this type of project. The hourly average noise levels would vary, but  
 10 construction noise levels of up to approximately 75–80 dB at 50 feet are typical for the anticipated  
 11 construction of the gen-tie line corridor. Typical operating cycles may involve two minutes of full  
 12 power, followed by three or four minutes at lower levels. With average construction noise levels  
 13 during grading and other typical construction activities in the range of 75-80 dBA Leq (hourly) at  
 14 50 feet from the construction activity, even the nearest residences would not be exposed to extreme  
 15 construction noise during gen-tie construction.

1 Although the adjacent residences could be exposed to high construction noise levels which could  
2 result in annoyance, the exposure would be short-term, would occur during the less sensitive  
3 daytime period, and would cease upon completion of project construction. For the gen-tie, which  
4 is located within County jurisdiction, it is anticipated that construction activities associated with  
5 the proposed project would take place between 6 a.m. and 9 p.m. weekdays and between 8 a.m. and  
6 9 p.m. on weekends, which is the limit specified in the Kern County noise ordinance. However,  
7 construction activities could take place outside these time periods for portions of the proposed  
8 project where technical requirements dictate, such as completion of transmission line stringing. As  
9 a result, a significant construction noise impact could potentially occur. Mitigation Measures MM  
10 3.12-1b and MM 3.12-2b would be implemented to reduce temporary construction related noise  
11 impacts from gen-tie construction for sensitive receptors within 1,000 feet of a construction area.

12 It should be noted that the other specific plan areas through which the project and gen-tie line  
13 corridor would traverse (i.e., the Mojave Specific Plan, the West Edwards Road Settlement Specific  
14 Plan, the South of Mojave-Elephant Butte Specific Plan, and the WSSP) defer to the Kern County  
15 noise standards and do not have separate noise requirements. Adherence to the Kern County  
16 General Plan goals and policies, as well as the Kern County Municipal Code, would minimize any  
17 potential adverse impacts from construction noise.

### 18 **Construction Vibration**

19 The heavier pieces of construction equipment used on the solar facility site would include dozers,  
20 graders, and pavers. Based on published vibration data, the anticipated construction equipment  
21 would generate a PPV of approximately 0.09 inches/second or less at a distance of 25 feet (FTA,  
22 2006). Groundborne vibration is typically attenuated over short distances. The nearest existing  
23 residences to the solar facility construction boundary would be approximately 100 feet or more. At  
24 100 feet from the source of activity, vibration velocities would range from 0.0004 to 0.081  
25 inches/second PPV. Therefore, as each of these vibration values would fall well below the 0.1  
26 inches/second PPV “perception” range and the 0.2 inches/second PPV “building damage”  
27 significance threshold, no sources of solar facility construction-related groundborne vibration  
28 would be expected to affect receptors or structures outside of the work areas.

29 Construction of the proposed gen-tie line corridor would have the potential to expose existing  
30 residences to groundborne vibration as construction activities would take place less than 100 feet  
31 from some residences. At 50 feet from the source of activity (the nearest residence to the gen-tie  
32 routes), vibration velocities could range up to 0.16 inches/second PPV. Therefore, while the  
33 vibration would be perceptible to some residents for a short time while construction is nearby, it  
34 would fall below the 0.2 inches/second PPV significance threshold, and gen-tie construction would  
35 not be anticipated to result in physical damage to existing residential structures. Therefore, impacts  
36 related to vibration from construction activities would be less than significant.

### 37 **Operation and Maintenance**

38 Project operations and maintenance would generally involve management of lighting, noise,  
39 materials storage and cleanup, safety, and equipment repair. Typically, the project is expected to  
40 be staffed by up to 10 full-time personnel for operation, maintenance, and security of the solar  
41 facility. Additional maintenance and security personnel would be dispatched to the solar facility,

1 as needed. Operational noise levels that would be generated by the Proposed Action would include  
2 operation of onsite electrical equipment and worker trips to and from the site for inspection and  
3 maintenance purposes. Noise from electrical equipment, such as transformers, is characterized as a  
4 discrete low-frequency hum. Among this type of equipment, transformers would be expected to  
5 contribute the most to the composite noise at the site. The noise from transformers is produced by  
6 alternating current flux in the core that causes it to vibrate (an effect also known as  
7 magnetostriction).

8 The National Electrical Manufacturers Association standard sound levels for 1,000- to 1,500- kVA  
9 commercial transformers (e.g., liquid-filled transformers) at a distance of one foot from the source  
10 ranges between 58 to 60 dBA. However, because the proposed solar facility would only operate  
11 during daylight, noise levels associated with operation of transformers and other electrical  
12 equipment would only occur during daytime hours. Specific transformer locations within the solar  
13 facility have not been identified, but the nearest residential receptors adjacent to the site are at least  
14 100 feet from the project site boundary. The noise level of transformers at the nearest sensitive  
15 receptor to the site boundary would be approximately 20 dBA or less, which is below the ambient  
16 noise level and below the County's maximum exterior noise level for noise-sensitive uses. Because  
17 the residences are located off base in land under County jurisdiction, an exterior noise exposure  
18 level of 65 dBA maximum is applicable to these residences.

19 The Proposed Action would employ passive solar power generation through the use of fix-mounted  
20 PV solar modules or single-axis trackers. Fixed mounted PV modules do not require heat transfer  
21 fluids or mechanical equipment, and do not generate noise. All electrical equipment within the solar  
22 array field would be either outdoor rated or mounted within electrical enclosures designed  
23 specifically for outdoor installation such that the noise from these units would not be perceptible to  
24 the nearest sensitive use.

25 The proposed solar facility would also include up to three on-base substations. Each substation  
26 would increase the generation voltage from 34.5 kV to 230 kV for off-base transmission to SCE's  
27 Windhub Substation and/or Westwind Substation. The National Electrical Manufacturers  
28 Association standard sound level for a step-up transformer of this capacity at a distance of 5 feet  
29 from the source is 60 dBA. Because the proposed solar facility would only operate during daylight,  
30 noise levels associated with operation of the step-up transformers would only occur during daytime  
31 hours. Specific step-up transformer locations within the solar facility have not been identified, but  
32 the nearest residential receptors adjacent to the site are at least 100 feet from the project site  
33 boundary. The noise level of a step-up transformer at the nearest sensitive receptor to the site  
34 boundary would be approximately 28 dBA or less, which is below the ambient noise level and  
35 below the County's maximum exterior noise level for noise-sensitive uses. As with the other  
36 electrical equipment, the substations would not produce perceptible noise increases at the nearest  
37 sensitive receptors.

38 Operation of the proposed gen-tie transmission lines would have little potential to generate  
39 substantial levels of noise. However, transmission lines are subject to a phenomenon called  
40 "Corona discharge noise". Corona discharge results from the partial breakdown of the electrical  
41 insulating properties of the air surrounding electricity conductors. When the intensity of the electric

1 field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona  
2 discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some  
3 of the energy may dissipate in the form of small local pressure changes that result in audible noise,  
4 or in radio or television interference. Audible noise generated by corona discharge is characterized  
5 as a hissing or crackling sound that may be accompanied by a hum.

6 Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the  
7 electric field strength near the conductor surface, making corona discharge and the associated  
8 audible noise more likely. Therefore, audible noise from transmission lines is generally a foul  
9 weather (wet conductor) phenomenon. Based on precipitation data from the Western Regional  
10 Climate Center, the Mojave region receives approximately 6.7 inches of precipitation a year, with  
11 daily highs of less than 0.10 inch per day (WRCC 2017). Because the number of days and amount  
12 of precipitation per year would be minimal, corona events would be rare and intermittent.

13 Nonetheless, to evaluate the potential significance of corona noise, research was conducted to  
14 determine the sound level associated with this phenomenon. Veneklasen Associates conducted  
15 noise measurements of a 500 kV double-circuit transmission line. Since corona noise is relative to  
16 the capacity of the transmission line, the noise levels from a 500 kV line would be greater than for  
17 the project's 230 kV transmission line. Veneklasen conducted noise measurements on a 15-minute  
18 average for a 500 kV double-circuit transmission line near Serrano Substation in Anaheim Hills,  
19 when humidity was greater than 80 percent and temperatures were in the range of 60 degrees F  
20 (conditions contributing to high corona noise). Directly under the transmission line tower, the  
21 measured level of corona noise, when ideal conditions existed for this phenomenon to occur, were  
22 46 dBA (Veneklasen Associates, Inc. 2004). Beyond 100 feet of the T/L, the corona noise level  
23 drops at a rate of approximately 4 dB for each doubling of the distance. At a distance of 50 feet  
24 from the transmission line (the nearest residence) the corona discharge noise level would be  
25 approximately 44 dBA roughly equivalent to the existing ambient noise levels in the project area.  
26 Consequently, corona noise would not have the potential to create an operational noise level of 65  
27 dBA CNEL, or to increase ambient noise levels greater than 5 dBA above ambient. Since gen-tie  
28 routes are located on land under the jurisdiction of the County, the exterior exposure limit of 65  
29 dBA CNEL for residences is applicable to long-term operational noise from the gen-tie.

30 The project would install polymer (silicon rubber) insulators on any new gen-tie transmission line  
31 connections. This material is hydrophobic (repels water) and minimizes the accumulation of surface  
32 contaminants such as soot and dirt, which in turn reduces the potential for corona noise to be  
33 generated at the insulators. With consideration of these standard practices, noise from coronal  
34 discharge would not represent a substantial increase in noise levels in the project vicinity.

35 Other maintenance activities, such as visual inspections, vegetation mowing, and parts replacement,  
36 would be expected to be long-term over the life of the Proposed Action. Potential effects from these  
37 activities on the existing ambient noise levels may be detectable for a short duration at the site and  
38 on local roads (minor increase in traffic), but given the relative location of the site with respect to  
39 sensitive receptors, any potential increases in the noise levels onsite are unlikely to be detectable  
40 or of concern to nearby receptors. Due in part to the relatively low number of employees needed to  
41 operate and maintain the project, project operation would not interfere with traffic flow function,

1 increase traffic volumes, or result in roadway modifications. Furthermore, since the project would  
2 comply with Kern County Municipal Code's (Chapter 8.36, Noise Control) 65 dBA Ldn for  
3 outdoor activity areas for neighboring residential properties, there would be no long-term effects  
4 on existing ambient noise and vibration levels from operations and maintenance of the Proposed  
5 Action.

## 6 **Decommissioning**

7 During the decommissioning phase, solar panels would be dismantled and removed from the site  
8 by truck and footings would be removed to a depth of three feet. The types of equipment used and  
9 activities performed during decommissioning would be similar to the construction phase of the  
10 project. Thus, decommissioning activities could generate temporary noise levels and effects similar  
11 to those that would occur during construction (as previously described).

## 12 **CEQA: Impact Significance Determination**

13 **Impact 3.12-1: Exposure of persons to, or generate, noise levels in excess of standards**  
14 **established in the local general plan or noise ordinance or applicable standards of other**  
15 **agencies.**

## 16 **Construction, Operation and Maintenance, and Decommissioning**

17 As described above in the NEPA analysis, during the construction and decommissioning phases,  
18 the maximum noise level generated at the solar facility site would be 93 dBA at 50 feet from the  
19 noise source or 87 dBA at the location of the nearest sensitive receptor (located at least 100 feet  
20 from construction activities). Along the proposed gen-tie line corridor, the maximum noise level is  
21 estimated to be 75-80 dBA at 50 feet, which is the distance from gen-tie construction to the nearest  
22 sensitive receptor. Temporary noise generated during construction and decommissioning is  
23 permitted in Kern County so long as noise is not generated within 1,000 feet of an occupied  
24 residential dwelling between the hours of 9:00 p.m. and 6:00 a.m. on weekdays, and between 9:00  
25 p.m. and 8:00 a.m. on weekends pursuant to the Kern County Noise Ordinance (Chapter 8.36 of  
26 the Kern County Municipal Code). However, the project does not propose nighttime construction  
27 and would comply with all regulations within the Kern County Noise Ordinance. Thus, noise  
28 impacts associated with a potential violation of established noise standards in the County General  
29 Plan and Noise Ordinance during the construction and decommissioning phases would be less than  
30 significant. However, Mitigation Measures MM 3.12-1a and MM 3.12-2a for the solar facility  
31 portion of the project site, as well as Mitigation Measures 3.12-1b and 3.12-2b for the gen-tie  
32 portion of the site, would be required when construction activities occur within 1,000 feet of an  
33 occupied residence in the County to avoid impacts from construction activities that may need to  
34 occur outside of allowable hours. Activities associated with operation and maintenance of the  
35 proposed solar facility and gen-tie line corridor would not be capable of producing noise levels in  
36 excess of Kern County standards (see Section 3.12.5). Impacts during operation and maintenance  
37 of the proposed solar facility and gen-tie line corridor would be less than significant.

## 38 **Mitigation Measures**

39 Implement Mitigation Measures MM 3.12-1a and MM 3.12-2a, as well as Mitigation Measures  
40 3.12-1b and 3.12-2b (see Section 3.12.5 for mitigation measures).

1 **Level of Significance after Mitigation**

2 Impacts would be less than significant.

3 **Impact 3.12-2: Exposure of persons to, or generate, excessive groundborne vibration or**  
4 **groundborne noise levels?**

5 **Construction, Operation and Maintenance, and Decommissioning**

6 The nearest structures to the construction activity area of the proposed solar facility site are  
7 residences, which are approximately 100 feet from the project site. As described above in the NEPA  
8 analysis, at 100 feet from the source of activity, vibration velocities would range from 0.0004 to  
9 0.081 inches/second PPV. Therefore, since vibration would fall below the 0.2 inches/second PPV  
10 significance threshold, solar facility construction-related groundborne vibration would not be  
11 expected to affect receptors outside of the work areas, and there would not be any potential for  
12 excessive exposure of persons to or generation of groundborne vibration levels.

13 Construction of the proposed gen-tie line corridor would have the potential to expose existing  
14 residences to groundborne vibration as construction activities would take place within 200 feet of  
15 some residences. With respect to any given existing residence in the area of the proposed gen-tie  
16 line corridor, construction activity close enough to cause any perceptible ground borne vibration  
17 would likely occur approximately 4–6 days, out of the total construction duration for the gen-tie  
18 alignment. At 50 feet from the source of activity (the nearest residence to the gen-tie routes),  
19 vibration velocities could range up to 0.16 inches/second PPV. Therefore, since vibration would  
20 fall below the 0.2 inches/second PPV significance threshold, gen-tie construction would not be  
21 anticipated to result in significant vibration impacts upon existing residences. Construction  
22 activities of the proposed gen-tie line corridor would not include blasting or pile driving. Further,  
23 there are no known vibration-sensitive land uses (i.e., research, manufacturing, or medical facilities  
24 using vibration-sensitive devices) within 10 miles of the proposed gen-tie line corridor area.  
25 However, implementation of mitigation measure MM 3.12-1b would further reduce any temporary  
26 gen-tie line construction-related noise impacts.

27 Activities associated with operation and maintenance of the proposed solar facility and gen-tie line  
28 corridor would not be capable of producing vibration levels in excess of Kern County standards  
29 (see Section 3.12.1.5). Vibration-related impacts during operation and maintenance of the proposed  
30 solar facility and gen-tie line corridor would be less than significant.

31 **Mitigation Measures**

32 Implement Mitigation Measure MM 3.12-1b

33 **Level of Significance after Mitigation**

34 Impacts would be less than significant.

1 **Impact 3.12-3: Result in a substantial temporary or periodic increase in ambient noise levels**  
2 **in the project vicinity above levels existing without the project.**

3 **Construction, Operation and Maintenance, and Decommissioning**

4 Operation and maintenance of the proposed project would not result in any activities that would  
5 generate substantial temporary or periodic increases in ambient noise levels. During project  
6 construction and decommissioning, temporary yet substantial sound levels would be generated at  
7 the proposed solar facility site and along the proposed gen-tie line corridor above levels existing  
8 without the project. The existing ambient noise levels in the proposed solar facility area ranges  
9 from 58.9 dBA Leq to 62.3 dBA Leq (see Table 3.12-5). The results of the existing ambient noise  
10 levels from long-term measurements reflect levels that range between 63 dBA Ldn and 64 dBA  
11 Ldn in the general vicinity of North-South Gen-Tie Route Options 1 and 2 (see Table 3.12-6). The  
12 results of the existing ambient noise levels from short-term measurements reflect levels that range  
13 between 34 dBA Leq and 75 dBA Leq in the general vicinity of the East-West Gen-Tie Route  
14 which passes through a wind-energy generation facility and would also cross SR-14 (see Table  
15 3.12-7). The maximum sound level generated during construction of the proposed solar facility  
16 area would be 93 dBA Leq at 50 feet. The nearest sensitive receptors from the proposed solar  
17 facility site at 100 feet away from the roadway centerline would experience noise levels of  
18 approximately 87 dBA Leq, an increase of 32 dBA. Along the proposed gen-tie line corridor, the  
19 maximum noise level is estimated to be 75-80 dBA at 50 feet from the nearest sensitive receptor,  
20 an increase ranging from 0 dBA to 46 dBA. Under CEQA, a project has a potentially significant  
21 impact if the project exposes people to noise levels in excess of standards established in the local  
22 general plan or noise ordinance. The County of Kern has established a noise ordinance to regulate  
23 construction noise. Temporary noise generated during construction and decommissioning is  
24 permitted in Kern County so long as noise is not generated within 1,000 feet of an occupied  
25 residential dwelling between the hours of 9:00 p.m. and 6:00 a.m. on weekdays, and between 9:00  
26 p.m. and 8:00 a.m. on weekends pursuant to the Kern County Noise Ordinance (Chapter 8.36 of  
27 the Kern County Municipal Code). Thus, compliance with the Kern County Noise Ordinance would  
28 ensure that temporary increases in ambient noise are less than significant. However, Mitigation  
29 Measures MM 3.12-1a and MM 3.12-2a for the solar facility portion of the project site, as well as  
30 Mitigation Measures 3.12-1b and 3.12-2b for the gen-tie portion of the site, would be required when  
31 construction activities occur within 1,000 feet of a sensitive receptor to further reduce impacts. This  
32 impact would be less than significant.

33 **Mitigation Measures**

34 Implement Mitigation Measures MM 3.12-1a and MM 3.12-2a, as well as Mitigation Measures  
35 MM 3.12-1b and MM 3.12-2b (see Section 3.12.5 for mitigation measures).

36 **Level of Significance after Mitigation**

37 Impacts would be less than significant.

1 **Impact 3.12-4: For a project located within the Kern County Airport Land Use Compatibility**  
2 **Plan (ALUCP), would the project expose people residing or working in the project area to**  
3 **excessive noise levels.**

4 As described in Section 3.4, *Airspace Management and Use*, the proposed solar facility site would  
5 be located on Edwards AFB, which is identified in the Kern County ALUCP. In addition, the solar  
6 facility site and portions of the gen-tie line corridor would be located 5 miles and 1.5 miles,  
7 respectively, from the Mojave Air and Space Port, which is also identified in the ALUCP.

8 The construction workforce may consist of 100 to 450 daily workers. Operational workforce is  
9 expected to consist of up to 10 full-time employees. The project site is also adjacent to sensitive  
10 residential uses. These existing sensitive receptors located within the proposed solar facility area  
11 already experience ambient noise levels ranging from 58.9 dBA Leq to 62.3 dBA Leq (see Table  
12 3.12-5). The existing sensitive receptors located within the proposed gen-tie line corridor  
13 experience ambient noise levels ranging from 63 dBA Ldn and 64 dBA Ldn (see Table 3.12-6) and  
14 between 34 dBA Leq and 75 dBA Leq (see Table 3.12-7). In addition, these sensitive receptors are  
15 exposed to noise levels associated with airport operations at both Edwards AFB and Mojave Air  
16 and Space Port. As described above for Impact 3.12-3, the nearest sensitive receptors from the  
17 project site at 100 feet away from the roadway centerline would experience noise levels of  
18 approximately 87 dBA Leq, an increase of 32 dBA. Along the proposed gen-tie line corridor, the  
19 maximum noise level is estimated to be 75-80 dBA at 50 feet from the nearest sensitive receptor,  
20 an increase ranging from 0 dBA to 46 dBA. The increases during construction would be intermittent  
21 and temporary as it would only occur during activities located near the site boundary. In addition,  
22 implementation of Mitigation Measures MM 3.12-1a and MM 3.12-2a for the solar facility portion  
23 of the project site, as well as Mitigation Measures 3.12-1b and 3.12-2b for the gen-tie portion of  
24 the site, would help reduce impacts to sensitive receptors within 1,000 feet of the project. Once  
25 operational, this increase in noise levels would not occur and would be similar, if not the same, as  
26 existing ambient levels. Therefore, implementation of the proposed project would not result in the  
27 exposure of people at the project site to excessive noise levels. Impacts would be less than  
28 significant.

29 **Mitigation Measures**

30 Implement Mitigation Measures MM 3.12-1a and MM 3.12-2a, as well as Mitigation Measures  
31 3.12-1b and 3.12-2b (see Section 3.12.5 for mitigation measures).

32 **Level of Significance after Mitigation**

33 Impacts would be less than significant.

34 **3.12.3.2 Alternative B: 1,500-Acre EUL**

35 **NEPA: Environmental Impacts**

36 **Construction**

37 Alternative B includes the construction, operation, and decommissioning of a solar facility located  
38 within the same site as Alternative A, however, Alternative B would involve construction of solar  
39 arrays on approximately one-third of the acreage and construction-related ground disturbance  
40 associated with Alternative A. Alternative B would utilize the same gen-tie line route options

1 proposed in Alternative A. While impacts to sensitive receptors during construction would be  
2 similar to those discussed for Alternative A, Alternative B would only include construction of solar  
3 arrays on the western boundary of the site (along Lone Butte Road and eastern Trotter Avenue).  
4 Specifically, the nearest sensitive receptors to the solar facility under Alternative B would be  
5 approximately 350 feet, in comparison to approximately 100 feet under Alternative A. Therefore,  
6 impacts to sensitive receptors located on Trotter Avenue along the eastern portion of the site would  
7 be reduced compared to Alternative A. However, because Alternative B would utilize the same  
8 gen-tie line route options, the nearest sensitive receptor would remain at approximately 50 feet and  
9 impacts to sensitive receptors along the proposed gen-tie route corridor would remain the same.

10 In addition, because of the reduced acreage of this alternative, construction of Alternative B would  
11 require less time to construct than Alternative A, resulting in a reduction in the duration that  
12 construction noise would occur. Further, construction activities located within 1,000 feet of an  
13 occupied residential dwelling are prohibited between the hours of 9:00 p.m. and 6:00 a.m. on  
14 weekdays, and between 9:00 p.m. and 8:00 a.m. on weekends pursuant to the Kern County Noise  
15 Ordinance (Chapter 8.36 of the Kern County Municipal Code). Mitigation Measures MM 3.12-1a  
16 and MM 3.12-2a for the solar facility portion of the project site, as well as Mitigation Measures  
17 3.12-1b and 3.12-2b for the gen-tie portion of the site, would be required when construction  
18 activities occur within 1,000 feet of a sensitive receptor to further reduce effects. Additionally, over  
19 the anticipated two-year construction period, construction activities would not continually be  
20 located at the project boundary (nearest to the sensitive uses), therefore, they would not continually  
21 be exposed to the highest noise levels.

## 22 **Operation and Maintenance**

23 Alternative B would result in similar noise level effects as described for Alternative A. However,  
24 because of the reduced size of this alternative, the geographic area within Alternative B would be  
25 smaller than that of Alternative A. This smaller size would limit the area within which noise levels  
26 experienced by the public could be generated. Consequently, noise levels associated with operation  
27 and maintenance of Alternative B would be reduced relative to Alternative A. As described in the  
28 NEPA analysis for Alternative A, the noise level of transformers at the nearest sensitive receptor  
29 would be approximately 20 dBA, and noise from the proposed gen-tie line would be less than 44  
30 dBA, which would be less than the 65 dBA Ldn for outdoor activity areas, as outlined in the Kern  
31 County Municipal Code (Chapter 8.36, Noise Control). In addition, noise levels associated with  
32 operation of Alternative B would be reduced further relative to Alternative A and Alternative B  
33 would be in compliance with the Kern County Noise Ordinance. Therefore, there would be no long-  
34 term effects on existing ambient noise and vibration levels from operations and maintenance of the  
35 Alternative B.

## 36 **Decommissioning**

37 Alternative B would result in similar decommissioning-related noise level effects as Alternative A.  
38 The reduced scale of Alternative B would likely reduce the amount of time heavy machinery would  
39 be onsite during decommissioning. Consequently, excessive noise level effects to sensitive  
40 receptors associated with the decommissioning during Alternative B would be reduced relative to  
41 Alternative A.

1 **CEQA: Impact Significance Determination**

2 **Construction, Operation and Maintenance, and Decommissioning**

3 The impact statements and CEQA significance determinations identified for Alternative A also  
4 apply to Alternative B. Because Alternative B would only include construction of solar arrays on  
5 the western boundary of the site (along Lone Butte Road and eastern Trotter Avenue), the nearest  
6 sensitive receptors to the solar facility under Alternative B would be approximately 350 feet from  
7 the solar facility, in comparison to approximately 100 feet under Alternative A. Therefore,  
8 temporary noise increases at sensitive receptors located on Trotter Avenue along the eastern portion  
9 of the site would be reduced. However, as Alternative B would utilize the same gen-tie line route  
10 options, the nearest sensitive receptor would remain at approximately 50 feet and impacts to  
11 sensitive receptors along the proposed gen-tie route corridor would remain the same. Similar to  
12 Alternative A, Alternative B would comply with all applicable noise standards and ordinances.  
13 Thus, Impact 3.12-1 would be less than significant for Alternative B. Mitigation Measures MM  
14 3.12-1a and MM 3.12-2a for the solar facility portion of the project site, as well as Mitigation  
15 Measures 3.12-1b and 3.12-2b for the gen-tie portion of the site, would be required when  
16 construction activities occur within 1,000 feet of a sensitive receptor to further reduce impacts.  
17 Alternative B would result in a temporary increase in ambient noise during construction. The sound  
18 level experienced by the nearest sensitive receptor would be the same as estimated for Alternative  
19 A. However, Alternative B would require less time to construct, and construction noise would occur  
20 over a shorter period of time. Compliance with the Kern County Noise Ordinance construction  
21 hours and noise levels would ensure that the project would not generate temporary or periodic noise  
22 in excess of established noise standards. Therefore, Impact 3.12-2 would be less than significant.  
23 Alternative B would result in a smaller workforce during construction, and construction work  
24 would occur over a shorter period of time. Therefore, fewer workers would be exposed to aircraft  
25 noise under Alternative B. In addition, impacts resulting from aircraft noise would be less than  
26 significant due to the distance of Edwards AFB runways from the solar facility site and gen-tie  
27 route options, the lack of habitable structures, and the proximity of existing sensitive uses.  
28 Therefore, Impact 3.12-3 would be less than significant for Alternative B.

29 **Mitigation Measures**

30 Implement Mitigation Measures MM 3.12-1a and MM 3.12-2a, as well as Mitigation Measures  
31 3.12-1b and 3.12-2b (see Section 3.12.5 for mitigation measures).

32 **Level of Significance after Mitigation**

33 Impacts would be less than significant.

34 **3.12.3.3 Alternative C: No Action/No Project**

35 **NEPA: Environmental Impacts**

36 **Construction, Operation and Maintenance, and Decommissioning**

37 Under this alternative, none of the components proposed under Alternative A would be built. If  
38 Alternative C were implemented, there would be no changes to on-site conditions or the existing  
39 environmental setting as described above. There would be no construction vehicles and/or  
40 employees to access the project site. Thus, Alternative C would not significantly affect noise levels  
41 during the construction, operation and maintenance, and decommissioning phases.

1 **CEQA: Impact Significance Determination**

2 **Construction, Operation and Maintenance, and Decommissioning**

3 As described above in the NEPA analysis, under this alternative, none of the components proposed  
4 under Alternative A would be built. If Alternative C were implemented, there would be no changes  
5 to onsite conditions or the existing environmental setting as described above. Impacts would be  
6 less than significant.

7 **Mitigation Measures**

8 No mitigation measures are required.

9 **Level of Significance after Mitigation**

10 Impacts would be less than significant.

11 **3.12.4 Cumulative Impact Analysis**

12 **3.12.4.1 NEPA: Cumulative Environmental Effects and Their**  
13 **Significance**

14 As shown in Table 3-1, multiple projects, including several utility-scale solar and wind energy  
15 production facilities, are proposed throughout Kern and Los Angeles Counties. Many, like the  
16 project site, are located in the Mojave Desert. The Recurrent Energy (RE) Columbia 3 solar energy  
17 project located four miles northwest of the solar facility is the nearest project to the solar facility  
18 site. The following projects are located within the vicinity of the gen-tie line corridor:

- 19 • RE Columbia
- 20 • RE Columbia Two
- 21 • RE Columbia 3
- 22 • RE Rio Grande
- 23 • High Desert Solar
- 24 • The Aeromen LLC
- 25 • Mojave Solar Park by Cal West
- 26 • Golden Queen Mining Company

27 Due to the localized nature of noise impacts, the Proposed Action would not contribute to  
28 significant cumulative noise impacts. Construction activities associated with other projects in  
29 proximity to the project site could occur at the same time as the Proposed Action. These related  
30 projects would also be subject to Kern County noise standards and established thresholds pertaining  
31 to increased noise at the locations of sensitive receptors, as well as similar mitigation measures.  
32 When considered with other past, present, and reasonably foreseeable future projects, the Proposed  
33 Action would not result in a cumulatively considerable contribution to adverse noise effects in the  
34 vicinity of the project site.

1 **3.12.4.2 CEQA: Cumulative Impact Significance Determination**

2 Cumulative impacts would be the same as those described above under the NEPA analysis;  
3 cumulative impacts related to excessive ambient noise levels would be less than significant with  
4 implementation of Mitigation Measures MM 3.12-1a and MM 3.12-2a for the solar facility portion  
5 of the project site, as well as Mitigation Measures 3.12-1b and 3.12-2b for the gen-tie portion of  
6 the site.

7 **Mitigation Measures**

8 Implement Mitigation Measure MM 3.12-1a and MM 3.12-2a, as well as Mitigation Measures 3.12-  
9 1b and 3.12-2b (see Section 3.12.5 for mitigation measures).

10 **Level of Significance after Mitigation**

11 Cumulative impacts would be less than significant.

12 **3.12.5 Mitigation Measures**

13 **3.12.5.1 Solar Facility Mitigation Measures**

14 **MM 3.12-1a: Noise Reduction.** To reduce temporary construction related noise impacts, the  
15 following shall be implemented by the project proponent:

- 16 1. Equipment staging shall be located in areas that will create the greatest distance between  
17 construction-related noise sources and noise sensitive receptors nearest the project site  
18 during construction to the extent practical. The project contractor shall place all stationary  
19 construction equipment so that emitted noise is directed away from sensitive receptors  
20 nearest the project site, where feasible.
- 21 2. The contractor shall ensure all construction equipment is equipped with manufacturers  
22 approved mufflers and baffles, where feasible.
- 23 3. The construction contractor shall establish a Noise Disturbance coordinator for the project  
24 during construction. The Disturbance Coordinator shall be responsible for responding to  
25 any complaints about construction noise. The Disturbance Coordinator shall determine the  
26 cause of the complaint and shall be required to implement reasonable measures to resolve  
27 the complaint. Contact information for the Disturbance Coordinator shall be submitted to  
28 the Kern County Planning and Natural Resources Department prior to any ground  
29 disturbing activities commence.
- 30 4. During all construction or decommissioning phases of the project, the construction  
31 contractor shall limit all on-site noise-producing activities to the hours of 6:00 a.m. to 9:00  
32 p.m., Monday through Friday, and to the hours of 8:00 a.m. and 9:00 p.m. on Saturdays  
33 and Sunday or as required through the Kern County Noise Ordinance (Municipal  
34 Ordinance Code 8.36.020).

35 **MM 3.12-2a: Public Notification.** Prior to commencement of any on-site construction activities  
36 (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project  
37 proponent shall provide written notice to the public through mailing a notice.

- 38 1. The mailing notice shall be to all residences within 1,000 feet of the project site, 15 days  
39 or less prior to construction activities. The notices shall include: The construction schedule,

- 1 telephone number and email address where complaints and questions can be registered with  
2 the noise disturbance coordinator.
- 3 2. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction  
4 site or adjacent to the nearest public access to the main construction entrance throughout  
5 construction activities that shall provide the construction schedule (updated as needed) and  
6 a telephone number where noise complaints can be registered with the noise disturbance  
7 coordinator.
- 8 3. Documentation that the public notice has been sent and the sign has been posted shall be  
9 provided to the Air Force and to Kern County.

### 10 **3.12.5.2 Gen-tie Mitigation Measures**

11 **MM 3.12-1b: Noise Reduction.** To reduce temporary generation-tie line construction related noise  
12 impacts, the following shall be implemented by the project proponent:

- 13 1. In the event a noise sensitive receptor is constructed within 1,000 feet of the tie-line site:
- 14 a. Equipment staging shall be located in areas that will create the greatest distance between  
15 generation tie-line construction-related noise sources and noise sensitive receptors nearest  
16 the tie-line site during generation tie-line construction to the extent practical.
- 17 b. The project contractor shall place all stationary tie-line construction equipment so that  
18 emitted noise is directed away from sensitive receptors nearest the gen-tie line site.
- 19 2. The construction contractor shall ensure all generation tie-line construction equipment is  
20 equipped with manufacturers approved mufflers and baffles.
- 21 3. The construction contractor shall establish a Noise Disturbance coordinator for the project  
22 during construction of the generation tie lines. The Disturbance Coordinator shall be  
23 responsible for responding to any complaints about construction noise. The Disturbance  
24 Coordinator shall determine the cause of the complaint and shall be required to implement  
25 reasonable measures to resolve the complaint. Contact information for the Disturbance  
26 Coordinator shall be submitted to the Kern County Planning and Natural Resources  
27 Department prior to commencement of any ground disturbing activities.
- 28 4. During all construction or decommissioning phases of the generation tie-lines, the  
29 construction contractor shall limit all on-site noise-producing activities to the hours of 6:00  
30 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  
31 Saturdays and Sunday or as required through the Kern County Noise Ordinance (Municipal  
32 Ordinance Code 8.36.020).

33 **MM 3.12-2b: Public Notification.** Prior to commencement of any generation tie line construction  
34 activities (i.e., mobilization of construction equipment, initial grading, etc.), the project proponent  
35 shall provide written notice to the public through mailing a notice.

- 36 1. The mailing notice shall be to all residences within 1,000 feet of the gen-tie sites, 15 days  
37 or less prior to generation tie-line construction activities. The notices shall include: The  
38 construction schedule, telephone number and email address where complaints and  
39 questions can be registered with the noise disturbance coordinator.
- 40 2. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the generation  
41 tie line construction site or adjacent to the nearest public access to the main construction  
42 entrance throughout construction activities that shall provide the generation tie line

- 1 construction schedule (updated as needed) and a telephone number where noise complaints  
2 can be registered with the noise disturbance coordinator.
- 3 3. Documentation that the public notice has been sent and the sign has been posted shall be  
4 provided to the Kern County Planning and Natural Resources Department.

### 5 **3.12.6 Residual Impacts after Mitigation**

6 Mitigation Measures MM 3.12-1a and MM 3.12-1b would substantially reduce potential noise  
7 impacts associated with the project to a less than significant level. There are currently no other  
8 impacts that are expected to occur as a result of construction, operation and maintenance, and/or  
9 decommissioning of the proposed project.

## 3.13 Public Services

### 3.13.1 Affected Environment

This EIS/EIR section describes the affected environment for public services in the proposed project area, including the regulatory and environmental setting, fire, police protection, schools, parks, scenic trails, medical services, and other public facilities. This section also addresses the potential impacts on public services that would result from implementation of the proposed project, and the mitigation measures that would reduce these potential impacts. Information for this section was taken from numerous sources, including the Kern County General Plan, local fire protection and law enforcement agencies, and other service agency plans.

#### 3.13.1.1 Scoping Issues Addressed

During the scoping period for the EIS/EIR (November 27, 2017, through December 27, 2017), one public scoping meeting was conducted, and written comments provided from the California Department of Transportation (Caltrans) were received that identified the following issues and concerns related to Public Services, which are addressed in this section:

- Installation and maintenance of utilities within the State Highway right-of-way must be done per Caltrans standards under permit.

#### 3.13.1.2 Regulatory Framework

##### ***Federal***

The Edwards Air Force Base (AFB) Installation Development Plan, Section 3.10, *Infrastructure*, describes the services and facilities available to the site and surrounding areas. This section of the plan states the necessary procedures as related to public services.

The County of Kern and Edwards Air Force Base Mutual Aid in Fire Protection and Hazardous Materials Incident Response Protection is an agreement that describes the County's and Edwards AFB's response to fire and hazardous waste events on a mutual basis. The agreement states that Edwards AFB will provide fire-fighting equipment and personnel to any point within the area for which the County normally provides fire or hazardous material protection, and vice versa.

##### ***State***

Under Title 14 of the California Code of Regulations (CCR), the California Department of Forestry and Fire Protection (CAL FIRE) has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (SRAs). In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes.

1 **Local**

2 Kern County applies and uses the National Fire Code set forth by the National Fire Protection  
3 Association, the California Fire Code, the California Building Code, and the Kern County  
4 Ordinance Code to regulate fire safety.

5 **Kern County General Plan**

6 The Kern County General Plan Land Use, Open Space, and Conservation Element establishes  
7 goals, policies, and implementation measures which require new discretionary developments to  
8 pay its proportional share of the local costs of infrastructure improvements required to service  
9 such development, including fire protection and police protection. The Kern County General Plan  
10 contains additional policies, goals, and implementation measures that are more general in nature  
11 and not specific to development such as the Proposed Action. These measures are not listed  
12 below, but, as stated in Chapter 1, *Introduction*, all policies, goals, and implementation measures  
13 in the Kern County General Plan are incorporated by reference.

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

15 1.4 Public Facilities and Services

16 Policies

- 17 Policy 1: New discretionary development will be required to pay its proportional share of  
18 the local costs of infrastructure improvements required to service such  
19 development.
- 20 Policy 6: The County will ensure adequate fire protection to all Kern County residents.
- 21 Policy 7: The County will ensure adequate police protection to all Kern County residents.

22 Implementation Measures

- 23 Measure A: Continue to administer the Capital Improvement Program (CIP) and coordinate  
24 with public utility providers listing the necessary improvements to Kern County's  
25 public services and facilities in collaboration with key service-providing agencies  
26 and the County Administrative Office as a first step toward the preparation of a  
27 long-term Public Services Plan for Kern County. This plan addresses the projected  
28 demand for public services throughout the County in comparison with projected  
29 revenues and identifies long-term financial trends for the major public service  
30 providers. The CIP and General Plan can assure compliance with the provisions of  
31 Government Code Sections 65401 and 65402 which require review of all capital  
32 facility decisions for consistency with this General Plan.
- 33 Measure L: Prior to the approval of development projects, the County shall determine the need  
34 for fire protection services. New development in the County shall not be approved  
35 unless adequate fire protection facilities and resources can be provided.

36 1.10 General Provisions

37 Goal

- 38 Goal 1: Ensure that the County can accommodate anticipated future growth and  
39 development while maintaining a safe and healthful environment and a prosperous

1 economy by preserving viable natural resources, guiding development away from  
2 hazardous areas, and assuring the provision of adequate public services.

3 **1.10.1 Public Services and Facilities**

4 Policies

5 Policy 9: New development should pay its pro rata share of the local cost of expansions in  
6 services, facilities, and infrastructure that it generates and upon which it is  
7 dependent.

8 Policy 15: Prior to approval of any discretionary permit, the County shall make the finding,  
9 based on information provided by the California Environmental Quality Act  
10 (CEQA) documents, staff analysis, and the applicant, that adequate public or  
11 private services and resources are available to serve the proposed development.

12 Policy 16: The developer shall assume full responsibility for costs incurred in service  
13 extension or improvements that are required to ensure the project. Cost sharing or  
14 other forms of recovery shall be available when the service extensions or  
15 improvements have a specific quantifiable regional significance.

16 **Kern County General Plan Chapter 4. Safety Element**

17 **4.6 Wildland and Urban Fire**

18 Policies

19 Policy 1: Require discretionary projects to assess impacts on emergency services and  
20 facilities.

21 Policy 3: The County will encourage the promotion of fire prevention methods to reduce  
22 service protection costs and costs to taxpayers.

23 Policy 4: Ensure that new development of properties have sufficient access for emergency  
24 vehicles and for the evacuation of residents.

25 Policy 6: All discretionary projects shall comply with the adopted fire code and the  
26 requirements of the fire department.

27 **Implementation Measure**

28 Measure A: Require that all development comply with the requirements of the Kern County  
29 Fire Department or other appropriate agency regarding access, fire flows, and fire  
30 protection facilities.

31 The Mojave Specific Plan identifies policies, goals, and implementation measures that would  
32 provide for adequate public facilities and services within the Specific Plan area.

33 The South of Mojave-Elephant Butte Specific Plan states as the community grows, the need for  
34 public buildings and grounds increase, and that the Fire, Police, and Library Departments report  
35 sufficient facilities at this time.

36 The West Edwards Road Settlement Specific Plan establishes goals, policies, and implementation  
37 measures intended to provide adequate public services and facilities to meet current and projected  
38 community needs. Prior to development, the developer must complete plans of a mutual water  
39 company and public sewer system and be approved by the appropriate government agency.

1 The Willow Springs Specific Plan identifies policies, goals, and implementation measures that  
2 would provide for adequate public facilities and services within the Specific Plan area. The plan  
3 includes requiring new development pay its proportional share of the local costs of infrastructure  
4 improvements required to service such development.

5 There are no goals, policies, or implementation measures within the Actis Interim Rural  
6 Community Plan that apply to Public Services.

7 The County of Kern Capital Improvement Plan identifies new public facilities that will be needed  
8 to serve the County's projected development through 2030. The scope of services includes parks,  
9 libraries, sheriff (public protection and investigation), fire, animal control, public health,  
10 landfill/transfer stations, and general government.

11 The purpose of Kern County's Public Facilities Mitigation Program is to identify those impacts  
12 on public services and identify the monetary mitigation necessary to provide the facilities  
13 associated with that growth.

### 14 **3.13.1.3 Environmental Setting**

#### 15 ***Regional Setting***

#### 16 **Fire Protection Services**

17 The Kern County Fire Department (KCFD) is responsible for fire protection services, fire  
18 prevention, emergency medical and rescue services, arson investigation, and hazardous materials  
19 coordination. The KCFD operates 46 full-time fire stations and one seasonal station, and is  
20 divided into seven battalions for operational management. Currently, the KCFD is staffed with  
21 approximately 550 uniformed firefighters, 157 on-duty personnel, 79 non-uniformed (civilian)  
22 personnel, and 100 other support personnel, for a total of 886 KCFD personnel (KCFD, 2018).  
23 The KCFD is equipped with 55 fire engines, 4 ladder trucks, 41 patrol vehicles, 25 command  
24 vehicles, 5 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary  
25 vehicles and equipment (KCFD, 2018).

26 The closest KCFD fire stations to the project site are Station No. 15 at 3219 35th West Street in  
27 Rosamond and Station No. 14 at 1953 Highway 58 in Mojave. Both stations are approximately  
28 6 miles from the project site. Both stations are located within Battalion 1, which serves the  
29 southeastern portion of Kern County. Battalion 1 covers an area of nearly 351,276 acres and  
30 consists of seven permanent stations and one seasonal station (KCFD, 2018).

31 Edwards AFB Fire Protection Division administers 5 fire stations on base. KCFD and Edwards  
32 AFB Fire Protection Division have a mutual-aid agreement that states that Edwards AFB will  
33 provide fire-fighting equipment and personnel to any point within the area for which the County  
34 of Kern normally provides fire or hazardous material protection, and vice versa. Upon request of  
35 either KCFD for Edwards AFB Fire Protection Division (or vice versa) to supply aid, fire-  
36 fighting equipment and personnel would be dispatched to any point within the area of jurisdiction  
37 of the requesting organization as designated by a representative of the requesting organization.  
38 The responding organization would report to the officer in charge of the requesting organization.

1 The requested quantity and type of equipment and personnel would be granted by the responding  
2 organization as deemed appropriate.

3 KCFD Station No. 14 and Station No. 15 would be the primary responders to a fire or emergency  
4 at the project site; however, in the event of a major fire, other resources would be called on to  
5 respond as necessary.

## 6 **Police Protection and Law Enforcement Services**

### 7 **Kern County Sheriff's Office**

8 Police protection services in Kern County are provided by the Kern County Sheriff's Office,  
9 including patrolling off-highway vehicle recreation areas in the desert and mountainous areas of  
10 the County. The nearest sheriff's station is located approximately 6 miles northeast of the project  
11 site, at 1771 Highway 58 in Mojave, California.

12 The Kern County Sheriff's Office consists of 14 substations that provide patrol services.  
13 Substations are staffed by police, investigators, and supervisors, and each substation has access to  
14 all department support services. Currently, the Kern County Sheriff's Department is staffed with  
15 1,202 sworn and civilian employees, 567 deputy sheriffs, 338 detention deputy positions, and 297  
16 professional support staff (Kern County Sheriff's Office, 2018). The nearest substation to the  
17 project site is the Rosamond substation, located approximately 3 miles west of the project site.

18 In 2001, the Kern County Sheriff's Office created the Off-Highway Vehicle Enforcement Team,  
19 which can be deployed anywhere in Kern County as needed. The Off-Highway Vehicle  
20 Enforcement Team's mission is to provide a law enforcement presence and patrol to those remote  
21 areas of Kern County that are not readily accessible by normal means. The Kern County desert  
22 area is host to hundreds of thousands of visitors during the off-highway vehicle season. Although  
23 exact numbers are not available, it is estimated that more than 500,000 visitors in the East Kern  
24 area alone participate in outdoor activities policed by the Off-Highway Vehicle Enforcement  
25 Team. Areas where off-highway vehicle activities occur include the Rosamond/Mojave Desert  
26 area and Tehachapi Mountains.

27 The Mojave substation would be the primary substation for police protection services for the  
28 proposed project and surrounding area. The substation geographically covers around 1,320 square  
29 miles, giving it one of the largest response areas of Kern County's substations. It provides law  
30 enforcement services to around 14,000 people and serves the greater Mojave area, including the  
31 communities of Cantil, Fremont Valley, Boron, North Edwards, Aerial Acres, Desert Lake and  
32 the military complexes at Edwards AFB. It is just over 6 miles to the east of the project site,  
33 located at 1771 Highway 58 in the community of Mojave (KCSO, 2015).

34 Response time to an incident at the project site would vary depending on the severity of the  
35 emergency, the number of deputies on duty, and where deputies are located when a call is  
36 received.

37 The average response time for the Sheriff's Office, measured from the time a service call is  
38 received until the time a patrol car arrives at the scene, is 5 minutes or less for an emergency or

1 immediate-response incident (e.g., a crime that is under way and/or a life-or-death situation) and  
2 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is  
3 not life-threatening). Response time to an emergency at or near the project site would vary  
4 depending on the location of nearest responding patrol and the level of demand at the substation  
5 at the time of the call. If demand is high, the response time will be longer than the average times  
6 given above. The response time for a nonemergency call could be eight minutes or more,  
7 depending on staffing and the number of other calls for service.

### 8 **California Highway Patrol**

9 As a major statewide law enforcement agency, the California Highway Patrol (CHP) is  
10 responsible for managing and regulating traffic for the safe, lawful, and efficient use of California  
11 highways. The agency also provides disaster and lifesaving assistance. The primary purpose of  
12 the CHP is to ensure highway safety and provide service to the public. When requested, it also  
13 assists local governments during emergencies. The CHP patrols state highways and all County  
14 roadways, enforces traffic regulations, responds to traffic accidents, and provides service and  
15 assistance to disabled vehicles. The CHP has a mutual aid agreement with KCSO.

16 The CHP provides traffic regulation enforcement, oversees response to emergency incidents on  
17 California's highways or assists other public agencies responding to emergency incidents, and  
18 promotes the safe and efficient movement of people and goods on California highways to  
19 minimize loss of life, injuries, and property damage. CHP officers patrol 105,000 miles of  
20 roadway and implement the CHP's other law enforcement activities (e.g., drug interception,  
21 vehicle theft investigation and prevention, vehicle inspections, accident investigations, and public  
22 awareness campaigns) with the support of the non-uniformed personnel assigned to area and  
23 division offices (CHP, 2014a).

24 The CHP has eight divisions that provide services in eight areas in California. The project site is  
25 within the jurisdiction of the Inland Division. The Inland Division has 11 offices with 650  
26 uniformed officers (Wood, 2015). The nearest Inland Division office to the project site is in the  
27 community of Mojave, 4.5 miles northwest of the site (CHP, 2014b).

## 28 **3.13.2 Environmental Consequences**

29 This section describes the environmental consequences relating to public services for Proposed  
30 Action. It describes the methods used to determine the effects of the proposed project and lists the  
31 thresholds used to conclude whether an effect would be significant.

### 32 **3.13.2.1 Assessment Methods/Methodology**

33 Public services in the area were evaluated to determine the availability of needed services for the  
34 Proposed Action and to address the potentially adverse impacts the Proposed Action may have on  
35 public service facilities. This evaluation included consideration of the existing location and  
36 staffing of public service entities, future capacity requirements of public services, and contact  
37 with staff at various public services agencies.

### 3.13.2.2 Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was significant related to public services if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice. The Kern County California Environmental Quality Act (CEQA) Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the CEQA Guidelines, to determine if a project could potentially have a significant adverse effect on public services.

A project could have a significant adverse effect on public services if it results in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire Protection
- Police Protection
- Schools
- Parks
- Other Public Facilities

The lead agency determined in the NOP that the following environmental issue areas would result in no impacts or a less than significant impact and were therefore scoped out of requiring further review in this EIS/EIR. Refer to Appendix A1 of this EIS/EIR for a copy of the NOP and additional information regarding these issue areas:

- Schools
- Parks
- Other Public Facilities

### 3.13.3 Analysis of Environmental Effects

#### 3.13.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### *NEPA: Environmental Impacts*

##### **Fire Protection**

Fire protection facilities requirements are based on the number of residents and workers in the 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 does the number of emergency medical calls. There are no residential structures on the project site, and none would be constructed under the proposed project. Therefore, no residents would occupy the proposed project and service demands per resident would not increase.

1 Service demands per employee are less than service demands per resident; nevertheless, the  
2 addition of construction and operational personnel to the area would result in a demand for fire  
3 protection services to accommodate fire suppression and emergency medical calls. The  
4 construction workforce may consist of as many as 100 to 550 workers onsite daily during project  
5 construction. The presence of construction workers on site would be temporary. During  
6 operations, the facility is expected to be staffed with 10 full-time personnel for operation,  
7 maintenance, and security of the solar facility. Construction and operation of the proposed project  
8 would generate truck and employee traffic along haul routes and at the project site, which could  
9 temporarily increase the need for fire services but new or physically altered KCFD facilities  
10 would not be required to accommodate this increased demand. Thus, this impact is considered  
11 less than significant. The developer would also be required to pay Kern County development  
12 impact fees for fire protection infrastructure. While this impact is considered less-than-significant  
13 without mitigation, Mitigation Measures MM 3.13-1a and MM 3.9-6a for the solar facility  
14 portion of the site, and Mitigation Measures MM 3.13-1b and MM 3.9-8b for the gen-tie portion  
15 of the project, provide further assurances of payment of fees and implementation of a fire safety  
16 plan.

17 The project would comply with all Kern County Fire Code requirements. Fire protection  
18 measures of the project may include portable carbon dioxide (CO<sub>2</sub>) fire extinguishers and/or the  
19 electrical enclosures that contain the inverters and medium voltage transformers. Additionally,  
20 fire protection for the solar array and the gen-tie would incorporate vegetation management  
21 programs. Within the solar array, vegetation would be controlled to minimize fire risk. For the  
22 gen-tie, clearance for vegetation would be implemented in accordance with California Public  
23 Utility Code General Order 95 (Rules for Overhead Electric Line Construction). In addition,  
24 construction and operation of the project would be subject to the provisions of the Uniform Fire  
25 Code and local amendments; Titles 19, 22, and 27 of the California Safety Code Regulations; the  
26 Kern County Ordinance Code; and the National Fire Prevention Association Standards.

27 Because the project site is adjacent to natural land, construction and operation of the project could  
28 result in increased risk of wildfires in the area. The project site is within an area of moderate fire  
29 hazard (CAL FIRE, 2007a; CAL FIRE, 2007b), Mitigation Measure MM 3.9-6a for the solar  
30 facility portion of the project site and Mitigation Measure MM 3.9-8b for the gen-tie portion of  
31 the project, which would implement a fire safety plan during construction and operation, includes  
32 measures to reduce the risk of fire at the project site.

### 33 **Police Protection**

34 The project would include a temporary influx of construction workers and a small number of  
35 permanent staff. Although service demands per employee would be less than service demands per  
36 resident, construction and operation of the proposed project could increase the level of demand  
37 for services from the Sheriff's Office. The project may attract vandals or present other security  
38 risks and potentially increase traffic. However, the project site is in a relatively remote location  
39 on Edwards AFB. It is surrounded by undeveloped land and rural communities and is unlikely to  
40 attract attention that would make the project facility susceptible to crime. Fencing and onsite  
41 security would be provided and access would be limited to the areas surrounding the sites during  
42 construction and operation, thereby minimizing the need for sheriff surveillance and response.

1 Construction activities associated with the project may increase traffic volumes along  
2 surrounding roads and highways; however, the additional volume of traffic associated with  
3 workers commuting to the site during construction would be temporary and is not expected to  
4 adversely affect the CHP's ability to patrol the highways. Temporary construction personnel and  
5 the 10 long-term operational staff are not expected to significantly impact the capacity of the  
6 existing police services in the area and would not result in the need for new or altered facilities.  
7 Implementation of Mitigation Measures MM 3.13-1a and MM 3.9-6a for the solar facility portion  
8 of the site, and Mitigation Measures MM 3.13-1b and MM 3.9-8b for the gen-tie portion of the  
9 project, would further reduce any potential impacts to police services during construction and  
10 operation of the project by providing monetary compensation to the Sheriff's Office to ensure  
11 adequate resources are available.

## 12 ***CEQA: Impact Significance Determination***

13 **Impact 3.13-1: The project would result in adverse physical impacts associated with the**  
14 **need for new or physically altered governmental facilities—the construction of which could**  
15 **cause significant environmental impacts—in order to maintain acceptable service ratios,**  
16 **response times, or other performance objectives for fire protection services or police**  
17 **protection and law enforcement services.**

18 The project site is within an area of moderate fire hazard, as determined by CAL FIRE (CAL  
19 FIRE, 2007a; CAL FIRE, 2007b). No residential structures exist or would be constructed under  
20 the proposed project. The project would include the development of a solar photovoltaic energy  
21 generation facility anticipated to be greater than 100 megawatts on up to 4,000 acres of non-  
22 excess land at Edwards AFB. The construction workforce may consist of as many as 100 to 550  
23 daily workers during peak project construction. The project would be staffed by up to 10 full-time  
24 personnel for operation, maintenance, and security of the solar facility. Emergency access and  
25 other safety features and plans for fire protection are typically included in the project plans.

26 As described, fire protection facilities requirements are based on the number of residents and  
27 workers in the KCFD primary service areas. Service demand is primarily tied to population, not  
28 building size, because emergency medical calls typically make up the majority of responses  
29 provided by the fire department. As the number of residents and workers increases, so does the  
30 number of emergency medical calls. Service demands per employee are less than service  
31 demands per resident; nevertheless, the addition of construction and operational personnel to the  
32 area would result in a demand for fire protection services to accommodate fire suppression and  
33 emergency medical calls. Construction and operation of the proposed project would generate  
34 truck and employee traffic along haul routes and at the proposed site, which could temporarily  
35 increase the need for fire and sheriff services, but new or physically altered KCFD and Edwards  
36 AFB fire-fighting facilities would not be required to accommodate this increased demand, so this  
37 impact is considered less than significant. The developer would also be required to pay  
38 appropriate Kern County development impact fees for fire protection infrastructure. While this  
39 impact is considered less than significant without mitigation, Mitigation Measures MM 3.13-1a  
40 and MM 3.9-6a for the solar facility portion of the site, and Mitigation Measures MM 3.13-1b  
41 and MM 3.9-8b for the gen-tie portion of the project, provide further assurances of payment of  
42 fees and implementation of a fire safety plan.

1 Construction and operation of the project could increase service needs for the Kern County  
2 Sheriff’s Office. The proposed project may attract vandals or present other security risks and  
3 potentially increase traffic. However, the project site is in a relatively remote location on Edwards  
4 AFB. It is surrounded by undeveloped land and rural communities and is unlikely to attract  
5 attention that would make the project facility susceptible to crime. Moreover, onsite security  
6 would be provided during the construction and operation of the project and access would be  
7 limited to the areas surrounding the site during construction and operation via fencing and gates,  
8 thereby minimizing the need for sheriff surveillance and response.

9 Construction activities may increase traffic volumes along surrounding roads and highways;  
10 however, the additional volume of traffic associated with workers commuting to the sites during  
11 construction would be temporary and is not expected to adversely affect the CHP’s ability to  
12 patrol the highways. The number of permanent full-time employees is expected to be relatively  
13 low and therefore not adversely affect the CHP’s ability to patrol the highways. New or  
14 physically altered Kern County Sheriff’s Office or CHP facilities would not be required to  
15 accommodate the limited increase in needs from the project and impacts to police services are  
16 less than significant. The developer would also be required to pay appropriate Kern County  
17 development impact fees for sheriff services. While this impact is considered less than significant  
18 without mitigation, Mitigation Measures MM 3.13-1a and MM 3.9-6a for the solar facility  
19 portion of the site, and Mitigation Measures MM 3.13-1b and MM 3.9-8b for the gen-tie portion  
20 of the project, would further assure the payment of fees.

### 21 **Mitigation Measures**

22 Mitigation Measures MM 3.13-1a, MM 3.13-1b, MM 3.9-6a, and MM 3.9-8b (see Sections 3.9.5  
23 and 3.13.5 for mitigation measures).

### 24 **Level of Significance after Mitigation**

25 Impacts would be less than significant.

## 26 **3.13.3.2 Alternative B: 1,500-Acre EUL**

### 27 ***NEPA: Environmental Impacts***

28 Alternative B includes the construction of a utility-scale PV solar facility on maximum of 1,500  
29 acres of land located within the same site as Alternative A. Because of the reduced scale of  
30 Alternative B, this alternative would require fewer construction workers and operations staff  
31 compared to Alternative A. Therefore, potential effects on fire and police services would likely be  
32 reduced. Like Alternative A, the developer would be required to pay Kern County development  
33 impact fees that would cover Alternative B’s incremental increase on demand for police and fire  
34 protection services. Impacts to public services as a result of implementation of Alternative B are  
35 not expected to be significant. However, Mitigation Measures MM 3.13-1a and MM 3.9-6a for  
36 the solar facility portion of the site, and Mitigation Measures MM 3.13-1b and MM 3.9-8b for the  
37 gen-tie portion of the project, would further assure the payment of fees and implementation of a  
38 fire safety plan.

1 ***CEQA: Impact Significance Determination***

2 Because Alternative B would result in less physical development than Alternative A, this  
3 alternative would require fewer construction workers and operations staff. Because impacts to fire  
4 and police services are based on the number of workers in the project area, Alternative B would  
5 result in fewer impacts to fire and police services compared to Alternative A and impacts would  
6 be less than significant. While this impact is considered less than significant without mitigation,  
7 Mitigation Measures MM 3.13-1a and MM 3.9-6a for the solar facility portion of the site, and  
8 Mitigation Measures MM 3.13-1b and MM 3.9-8b for the gen-tie portion of the project, provide  
9 further assurances of payment of fees and implementation of a fire safety plan.

10 **Mitigation Measures**

11 Mitigation Measures MM 3.13-1a, MM 3.13-1b, MM 3.9-6a, and MM 3.9-8b (see Sections 3.9.5  
12 and 3.13.5 for mitigation measures).

13 **Level of Significance after Mitigation**

14 Impacts would be less than significant.

15 **3.13.3.3 Alternative C: No Action/No Project**

16 ***NEPA: Environmental Impacts***

17 Under this alternative, none of the components proposed under Alternative A would be built. If  
18 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
19 environmental setting as described earlier. Therefore, there would be no increase in construction  
20 and operations staff in the project area and Alternative C would result in no impacts regarding fire  
21 and police services and no mitigation would be required.

22 ***CEQA: Impact Significance Determination***

23 Under this alternative, none of the components proposed under Alternative A would be built. If  
24 Alternative C were implemented, there would be no changes to onsite conditions and no need for  
25 construction or operations staff at the project site. Therefore, there would be no change in the  
26 need for fire and police services and Alternative C would result in no impacts to public services  
27 and no mitigation is required.

28 **Mitigation Measures**

29 No mitigation measures are required.

30 **Level of Significance after Mitigation**

31 No Impact.

32

## 3.13.4 Cumulative Impact Analysis

### 3.13.4.1 NEPA: Cumulative Environmental Effects and Their Significance

The developer would be required to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed project in order to mitigate any potential impacts to fire or police protection services resulting from the 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 the proposed project would be appropriately funded. Therefore, the proposed project would not create an adverse cumulative impact related to police, fire protection, or other public services.

Similar to the proposed project, all of the related projects listed in Table 3-1, would also be required to pay this mitigation fee, if deemed appropriate by the Kern County Planning and Natural Resources Department. These projects would also be required to undergo environmental review, in compliance with the requirements of NEPA and/or CEQA. Should potential impacts to public services be identified, appropriate mitigation would be prescribed that would minimize impacts to public services. Therefore, because the project would not create a significant effect on public services, and the other related projects would also be expected to avoid or mitigate impacts on public services, cumulative impacts would be avoided and/or minimized.

### 3.13.4.2 CEQA: Cumulative Impact Significance Determination

The cumulative study area is based on the service area for each of the fire and police offices serving the project site. The related projects listed in Table 3-1, could incrementally increase the need for fire and police services in the project area.

Development in the project vicinity, including residential, renewable energy, and commercial, has increased over the last century. Public services for fire and crime prevention have expanded to serve this increased development and population growth, but the potential for fire and crime is still higher than if no development occurred.

Impacts from several related projects in the vicinity of the proposed project could combine to result in cumulative impacts to police and fire services. These cumulative projects include the RE Columbia, RE Columbia 2, RE Columbia 3, RE Rio Grande, RE Rosamond One, RE Rosamond Two, RE Great Lakes project, High Desert Solar, and Mojave Solar Park by Cal West Energy. While the proposed project site is located in a relatively remote location on Edwards AFB, it is surrounded by undeveloped land and rural communities, and is unlikely to attract attention that would make the project facility susceptible to crime, the influx of construction workers for the proposed project and surrounding projects would increase the potential for crimes to occur, which may result in the need for increased support from local law enforcement. These cumulative projects when combined with the proposed project could also lead to increased demand for fire services. The addition of construction and operational equipment and personnel to the area would result in increased risk of fire ignition and therefore increased demand for fire protection and emergency services. However, with implementation of Mitigation Measures MM 3.13-1a and

1 MM 3.9-6a for the solar facility portion of the site, and Mitigation Measures MM 3.13-1b and  
2 MM 3.9-8b for the gen-tie portion of the project, the developer would be required to pay a fee  
3 assigned by the Kern County Planning and Natural Resources Department over the life of the  
4 proposed project to mitigate any potential impacts to fire or police protection services resulting  
5 from the proposed project and to fund any additional fire or police protection services required as  
6 a result of the proposed project. With payment of the required mitigation fee, any additional fire  
7 or police protection services, required as a result of the proposed project would be appropriately  
8 funded. Therefore, the proposed project would not create a cumulatively considerable impact  
9 related to police or fire protection services and would have a less-than-significant cumulative  
10 impact. While this impact is considered less than significant without mitigation, Mitigation  
11 Measures MM 3.13-1a, MM 3.13-1b, MM 3.9-6a, and MM 3.9-8b, would provide assurance of  
12 payment of fees.

13 Similar to the proposed project, the related projects listed in Table 3-1 would also be required to  
14 pay mitigation fees and undergo environmental review. Should potential impacts to public  
15 services be identified, appropriate mitigation would be prescribed. Therefore, because the project  
16 would not create a significant impact on public services, and the other related projects would also  
17 be expected to avoid or mitigate impacts on public services, cumulative significant impacts would  
18 be less than significant.

### 19 **Mitigation Measures**

20 Implement Mitigation Measures MM 3.13-1a, MM 3.13-1b, MM 3.9-6a, and MM 3.9-8b (see  
21 Sections 3.9-5 and 3.13.5 for mitigation measures).

### 22 **Level of Significance after Mitigation**

23 Cumulative impacts would be less than significant.

## 24 **3.13.5 Mitigation Measures**

### 25 **3.13.5.1 Solar Facility Mitigation Measures**

26 **MM 3.13-1a: Funding for County Fire and Sheriff's Protection.** The Kern County Fire and  
27 Sheriff's departments shall provide public services for the solar facility site at the Edwards Solar  
28 Project. In order to provide funding for this service as is normally required of solar projects, the  
29 project proponent shall implement the following mitigation steps:

- 30 1. For facility operation, the project proponent shall pay for impacts on countywide public  
31 protection, sheriff's patrol and investigative services, and fire services at a rate of \$28.84  
32 per 1,000 square feet of panel-covered ground for the facility operation and related on-  
33 site structures for the entire covered area of the project. The total amount shall be divided  
34 by the number of years of operation and paid on a yearly basis. If completed in phases,  
35 the annual amount shall be based on the square footage of ground covered by April 30 of  
36 each year. The amount shall be paid to the Kern County Auditor/Controller by April 30  
37 of each calendar year for each and every year of operation. Copies of payments made  
38 shall be submitted to the Kern County Planning and Natural Resources Department.
- 39 2. Written verification of ownership of the project shall be submitted to the Kern County  
40 Planning and Natural Resources Department by April 15 of each calendar year. If the  
41 project is sold to a city, county, or utility company with assessed taxes that total less than

1           \$1,000 per megawatt per year, then they will pay those taxes plus the amount necessary  
2           to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of  
3           operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of  
4           each calendar year.

5           3. The project proponent shall work with the County to determine how the use of sales and  
6           use taxes from construction of the project can be maximized. This process shall include,  
7           but is not necessarily limited to, the project proponent obtaining a street address within  
8           the unincorporated portion of Kern County for acquisition, purchasing and billing  
9           purposes, and registering this address with the State Board of Equalization. The project  
10          proponent shall allow the County to use this sales tax information publicly for reporting  
11          purposes.

12          4. Prior to the issuance of any building permits on the property, the project proponent shall  
13          submit a letter detailing the hiring efforts prior to commencement of construction; which  
14          encourages all contractors of the generation tie line sites to hire at least 50 percent of  
15          their workers from the local Kern County communities. The project proponent shall  
16          provide the contractors a list of training programs that provide skilled workers and shall  
17          require the contractor to advertise locally for available jobs, notifying the training  
18          programs of job availability, all in conjunction with normal hiring practices of the  
19          contractor.

### 20   **3.13.5.2   Gen-tie Mitigation Measures**

21   **MM 3.9-8b:** Prior to the issuance of grading or building permits, the project proponent/operator  
22   shall develop and implement a fire safety plan for use during construction, operation and  
23   decommissioning. The project proponent/operator shall submit the plan, along with maps of the  
24   generation tie-line sites and access roads, to the Kern County Fire Department for review and  
25   approval. The fire safety plan shall contain notification procedures and emergency fire  
26   precautions including, but not limited to the following:

- 27          1. All internal combustion engines, both stationary and mobile, shall be equipped with  
28          spark arresters. Spark arresters will be in good working order.
- 29          2. Light trucks and cars with factory-installed (type) mufflers will be used only on roads  
30          where the roadway is cleared of vegetation. These vehicle types will maintain their  
31          factory-installed (type) muffler in good condition.
- 32          3. Fire rules will be posted on the project bulletin board at the contractor's field office and  
33          areas visible to employees.
- 34          4. Equipment parking areas and small stationary engine sites will be cleared of all  
35          extraneous flammable materials.
- 36          5. Personnel shall be trained in the practices of the fire safety plan relevant to their duties.  
37          Construction and maintenance personnel shall be trained and equipped to extinguish  
38          small fires to prevent them from growing into more serious threats.
- 39          6. The project proponent/operator shall make an effort to restrict the use of chainsaws,  
40          chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to  
41          periods outside of the official fire season. When the above tools are used, water tanks  
42          equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.

1 **MM 3.13-1b: Funding for County Fire and Sheriff's Protection.** The project proponent shall  
2 implement the following mitigation steps at the project site:

- 3 1. For facility operation, the project proponent shall pay for impacts on countywide public  
4 protection, sheriff's patrol and investigative services, and fire services at a rate of \$28.84  
5 per 1,000 square feet of panel-covered ground for the facility operation and related on-  
6 site structures for the entire covered area of the project. The total amount shall be divided  
7 by the number of years of operation and paid on a yearly basis. If completed in phases,  
8 the annual amount shall be based on the square footage of ground covered by April 30 of  
9 each year. The amount shall be paid to the Kern County Auditor/Controller by April 30  
10 of each calendar year for each and every year of operation. Copies of payments made  
11 shall be submitted to the Kern County Planning and Natural Resources Department.
- 12 2. Written verification of ownership of the project shall be submitted to the Kern County  
13 Planning and Natural Resources Department by April 15 of each calendar year. If the  
14 project is sold to a city, county, or utility company with assessed taxes that total less than  
15 \$1,000 per megawatt per year, then they will pay those taxes plus the amount necessary  
16 to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of  
17 operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of  
18 each calendar year.
- 19 3. The project proponent shall work with the County to determine how the use of sales and  
20 use taxes from construction of the project can be maximized. This process shall include,  
21 but is not necessarily limited to, the project proponent obtaining a street address within  
22 the unincorporated portion of Kern County for acquisition, purchasing and billing  
23 purposes, and registering this address with the State Board of Equalization. The project  
24 proponent shall allow the County to use this sales tax information publicly for reporting  
25 purposes.
- 26 4. Prior to the issuance of any building permits on the property, the project proponent shall  
27 submit a letter detailing the hiring efforts prior to commencement of construction; which  
28 encourages all contractors of the project site to hire at least 50 percent of their workers  
29 from the local Kern County communities. The project proponent shall provide the  
30 contractors a list of training programs that provide skilled workers and shall require the  
31 contractor to advertise locally for available jobs, notifying the training programs of job  
32 availability, all in conjunction with normal hiring practices of the contractor.

### 33 3.13.6 Residual Impacts after Mitigation

34 The procedures in the fire safety plan and in Mitigation Measures MM 3.13-1a and MM 3.9-6a  
35 for the solar facility portion of the site, and Mitigation Measures MM 3.13-1b and MM 3.9-8b for  
36 the gen-tie portion of the project, would minimize environmental impacts. In the case that such  
37 procedures have significant impacts, mitigation measures will be developed in accordance with  
38 those procedures. No other residual impacts after mitigation exist.

39



## 3.14 Socioeconomics and Environmental Justice/ Population and Housing

### 3.14.1 Affected Environment

This section of the EIS/EIR describes the affected environment for population and housing, otherwise known as socioeconomics and environmental justice, in the proposed project area, including the regulatory and environmental setting.

#### 3.14.1.1 Scoping Issues Addressed

No comments and concerns related to population and housing, socioeconomic issues, or environmental justice were raised during the scoping process.

#### 3.14.1.2 Regulatory Framework

##### ***Federal***

Under NEPA (42 U.S. Code 4321 et seq.), an EIS must include an analysis of the Proposed Action's economic, social, and demographic effects related to effects on the natural or physical environment in the affected area, but does not allow for economic, social, and demographic effects to be analyzed in isolation from the physical environment.

Title VI of the Civil Rights Act of 1964 (42 U.S. Code [U.S.C.] 2000d et seq.) prohibits discrimination on the basis of race, color, or national origin in all programs or activities receiving federal financial assistance.

##### ***State***

The California Housing Element Law was established to review local government housing elements for compliance with state law and providing written comments to the local government. Using the information provided by local governments in its housing element, the California Department Housing and Community Development determines the regional housing need for each county and allocates funding to meet this need to the council of governments for distribution to its jurisdictions.

Assembly Bill 15 (California Revenue and Taxation Code §73), signed by the California Governor in June 2011, modified and extended existing state law excluding an “active solar energy system” from calculation of cash value subject to property taxation.

##### ***Local***

The Kern County General Plan Land Use, Open Space, and Conservation Element establishes policies, goals, and implementation measures that would ensure the County can accommodate anticipated growth and development while maintaining a safe and healthful environment and prosperous economy, while also ensuring the fair treatment of people of all races, cultures, incomes, and age groups (see Section 3.10, *Land Use*, for more information).

1 Because the proposed project would not include any new housing and would not displace any  
2 existing housing, the goals and policies of the Housing Element do not apply to the project.

3 The project is within the following planning areas, however there are no goals, policies, or  
4 implementation measures within these plans that apply to socioeconomic or environmental justice  
5 issues relevant to the project: Mojave Specific Plan., South of Mojave/Elephant Butte Specific Plan,  
6 West Edwards Road Settlement Plan, Willow Springs Specific Plan, and the Actis Interim Rural  
7 Community Plan.

8 The Kern Council of Governments (COG) acts as an area-wide planning agency, assisting local  
9 governments with multi-jurisdictional issues such as air quality, transportation, water quality,  
10 energy, and housing. The primary function of the Kern COG is to address regional transportation  
11 issues, but it also functions as the state-designated Census Data Center Affiliate.

### 12 **3.14.1.3 Environmental Setting**

#### 13 ***Socioeconomics***

14 This section of the EIS/EIR establishes the existing population and housing and socioeconomic  
15 trends in the region and in the vicinity of the project site. The project site is located within Edwards  
16 Air Force Base (AFB) in Kern County, just south and north of the unincorporated rural  
17 communities of Mojave and Rosamond, respectively. Larger populations near the project site  
18 include California City, located approximately 12 miles to the northeast, the city of Tehachapi,  
19 located approximately 20 miles to the northwest, and the city of Lancaster, which is approximately  
20 16 miles south of the project site. Bakersfield, which is the largest city in Kern County, is  
21 approximately 55 miles to the northwest (see **Figure 3.14-1**).

22 The project site is undeveloped. Land uses in the region include a mix of vacant land, agriculture,  
23 scattered single-family residential uses; urban development is concentrated in Rosamond and  
24 Mojave. Because the surrounding immediate area is mostly rural and sparsely populated, both  
25 temporary and long-term employees generated by the proposed project would be expected to draw  
26 from a regional pool and likely commute to the project site from within a 1-hour commute area.  
27 Thus, areas of potential social and economic effects for the proposed project, the socioeconomic  
28 study area, includes Rosamond, Mojave, the Bakersfield Census County Division (CCD), the  
29 Antelope Valley portions of Kern and Los Angeles counties, and Kern County as a whole, for  
30 comparative purposes.

31 Economic and employment data are generally available only for counties or Metropolitan Statistical  
32 Areas (MSAs). Where important additional data is available, such as for the Antelope Valley area,  
33 it has been incorporated for reference.

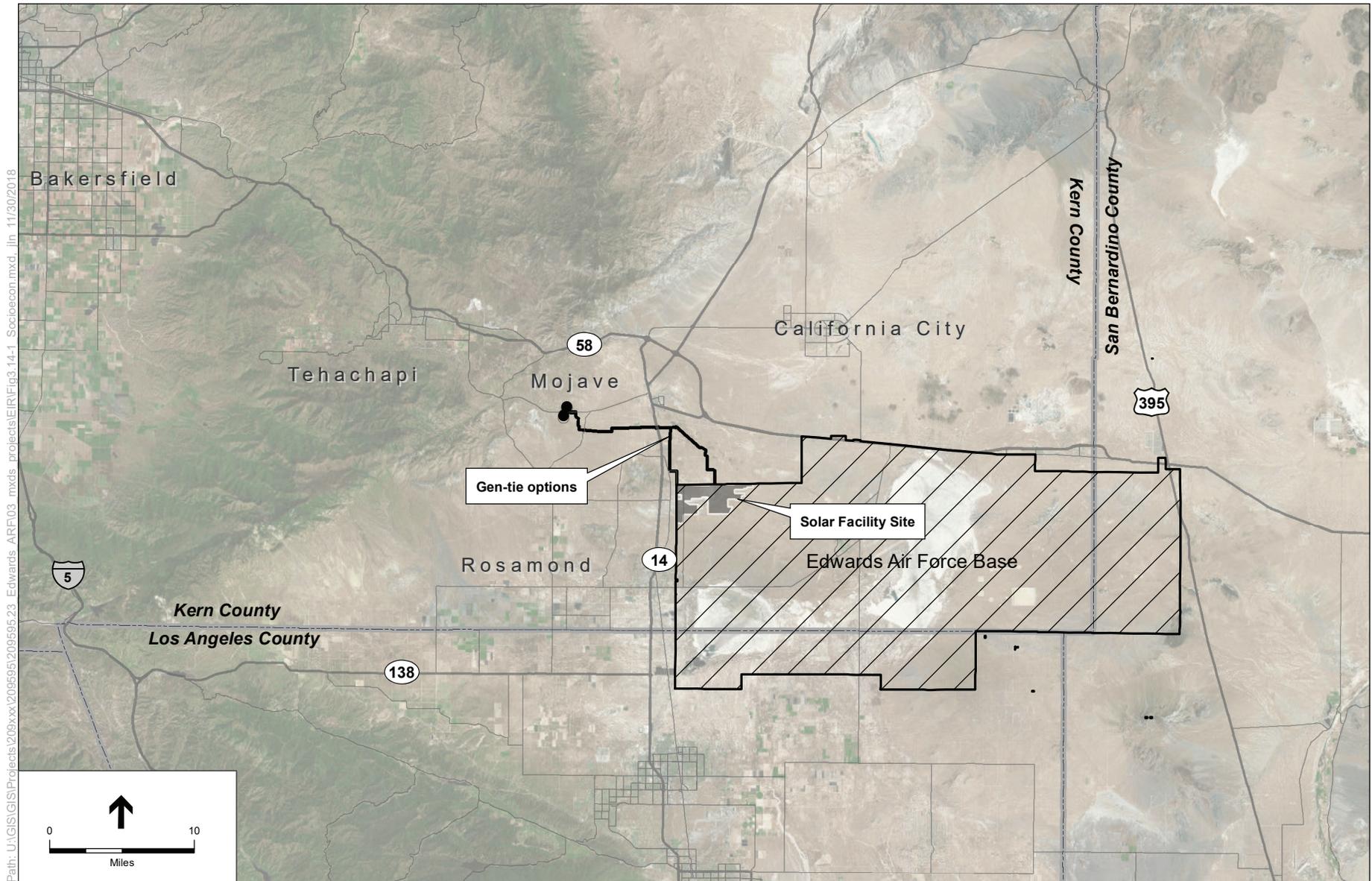


Figure 3.14-1: SOCIOECONOMIC STUDY AREA

**1 Regional and Local Population Trends**

2 At the regional scale, this analysis examines data for Kern County and the Bakersfield CCD. At the  
 3 local scale, the analysis examines the nearest communities to the project site, including the cities  
 4 of Tehachapi, California City, and Lancaster, and the unincorporated communities of Mojave and  
 5 Rosamond (which are also considered Census Designated Places (CDPs)). Population estimates  
 6 and recent growth trends for the regional and local study areas are summarized in **Table 3.14-1**.  
 7 Historical data (2000 census data) are also shown. Projections for future growth are also provided  
 8 (as projected by the California Department of Finance [DOF], the Southern California Association  
 9 of Governments (SCAG), and the Kern County COG). As shown in Table 3.14-1, population  
 10 throughout the region grew rapidly between 2000 and 2016 and is projected to continue to grow at  
 11 a measured pace, with Kern County as a whole exceeding 1 million residents by 2020 and the  
 12 Bakersfield CCD reaching nearly 1 million by 2040. California City, a small local municipality,  
 13 experienced the largest growth during the 16-year period, of 59.3 percent. The Mojave CDP  
 14 experienced no growth during the 16-year period.

**15 Regional and Local Housing Trends**

16 Current (2016) housing conditions for the regional and local study areas are summarized in  
 17 **Table 3.14-2**. In 2016, Kern County had an estimated 291,292 housing units and a vacancy rate of  
 18 9.9 percent. The Bakersfield CCD had an estimated 139,768 housing units and a vacancy rate of  
 19 7.4 percent. The communities closer to the project site have an estimated 70,464 housing units  
 20 among them, with vacancy rates that are all at 9.0 percent or higher. The most recent data available  
 21 (2010) for vacant units that are for rent or for sale is also shown.

**TABLE 3.14-1  
 HISTORICAL AND PROJECTED POPULATION OF THE STUDY AREA**

	Census		Projections*		
	2000	2016	2020	2030	2040
Kern County	661,645	871,337	929,787	1,067,631	1,213,558
% Change		31.7%	6.7%	14.8%	13.7%
Bakersfield CCD	409,800	411,089	640,500	764,900	939,700
% Change		0.31%	20.1%	19.4%	22.3%
City of Tehachapi	10,957	13,179	16,000	17,800	20,100
% Change		20.3%	15.3%	11.3%	12.9%
City of California City	8,385	13,360	17,300	21,300	26,100
% Change		59.3%	30.5%	23.1%	22.5%
City of Lancaster	118,718	159,651	174,800	201,300*	--
% Change		34.5%	10.7%	15.2%	
Mojave CDP	3,836	4,239	--	--	--
% Change		10.5%			
Rosamond CDP	14,349	19,672	--	--	--
% Change		37.1%			

\*SCAG projections only go through 2035.

SOURCE: U.S. Census Bureau, 2016g, Kern County COG, 2009, SCAG, 2012. CA DOF 2017b

**TABLE 3.14-2  
 HOUSING PROFILE OF THE STUDY AREA**

Housing Units	Kern County	Bakersfield CCD	City of Tehachapi	City of California City	City of Lancaster	Mojave CDP	Rosamond CDP
Total Housing	291,292	139,768	3,598	5,254	52,461	1,886	7,265
Occupied Housing	262,337	129,421	3,195	4,298	47,745	1,598	6,297
Percent Owner Occupied	56.9%	50.0%	61.8%	55.9%	54.8%	37.5%	63.7%
Percent Renter Occupied	43.1%	50.0%	38.2%	44.1%	45.2%	62.5%	36.3%
Vacant Housing	28,955	10,347	403	956	4,716	288	968
Vacancy Rate	9.9%	7.4%	11.2%	18.2%	9.0%	15.3%	13.3%
Vacant Units for Sale	5,072	2,165	61	229	1,119	41	200
Vacant Units for Rent	9,743	5,914	180	476	1,952	130	292

SOURCE: U.S. Census Bureau, 2016h.

1

2 **Employment**

3 Kern County consistently ranks among the top five most-productive agricultural counties in the  
 4 United States and is one of the nation’s leading petroleum-producing counties. Because of its  
 5 unique geographical positioning, Kern has also become the distribution center for some of the  
 6 world’s largest companies (EDD, 2017a). As of December 2017, Kern County had a total labor  
 7 force of 317,300 individuals, with 347,400 employed and an unemployment rate of 8.6 percent  
 8 (EDD, 2018a). Kern County’s unemployment rate was higher than the state’s current  
 9 unemployment rate of 4.2 percent for December, 2017. In 2016 (the most recent data available),  
 10 the American Community Survey estimated the median household income in Kern County at  
 11 \$49,788 (U.S. Census Bureau, 2016).

12 Employment statistics as of December 2017 by industry sector for Kern County are summarized in  
 13 Table 3.14-3. As demonstrated in **Table 3.14-3**, government is the largest employer in the County,  
 14 followed by trade, transportation and utilities and the agricultural industry, goods producing,  
 15 educational and health services, retail trade, professional and business services, and professional  
 16 and business services.

**TABLE 3.14-3  
 EMPLOYMENT BY INDUSTRY GROUP IN KERN COUNTY**

Industry	Persons Employed
Total Farm	54,200
Government	66,100
Mining and Logging	8,900

**TABLE 3.14-3  
 EMPLOYMENT BY INDUSTRY GROUP IN KERN COUNTY**

<b>Industry</b>	<b>Persons Employed</b>
Construction	14,300
Manufacturing	13,700
Trade, Transportation & Utilities	54,200
Financial Activities	8,300
Professional & Business Services	25,500
Educational & Health Services	36,500
Retail Trade	35,100
Leisure & Hospitality	25,400
Accommodation & Food Service	22,700
Goods Producing	36,900

SOURCE: EDD, 2017a.

1

2 **Government Revenues**

3 **Table 3.14-4** identifies the financing sources and use of funds adopted for Kern County for the  
 4 fiscal year 2016-2017. As shown, intergovernmental revenues and other financing services were  
 5 the largest sources of County funding, while public protection and public assistance were the largest  
 6 expenditures.

**TABLE 3.14-4  
 KERN COUNTY REVENUES AND EXPENSES FOR FY 2016-2017**

<b>Financing Sources</b>	<b>Amount</b>	<b>Percent</b>
Taxes	\$376,942,045	18.11%
Licenses, Permits, and Franchises	21,429,865	1.03%
Fines, Forfeitures, and Penalties	22,446,107	1.08%
Revenue from Use of Money and Property	10,575,282	0.51%
Intergovernmental Revenues	792,933,189	38.09%
Charges for Services	184,463,979	8.86%
Miscellaneous Revenues	11,154,421	0.54%
Other Financing Sources	471,543,971	22.65%
Balances Carried Forward from Prior Year	141,156,598	6.78%
Cancellation of Prior Year Reserves/Designations	49,324,731	2.37%
<i>Total Financing Sources</i>	<i>\$2,081,970,191</i>	<i>100.00%</i>

**TABLE 3.14-4  
 KERN COUNTY REVENUES AND EXPENSES FOR FY 2016-2017**

<b>Financing Sources</b>	<b>Amount</b>	<b>Percent</b>
<b>Use of Funds</b>		
General Government	\$125,638,978	6.03%
Public Protection	782,261,301	37.57%
Public Ways and Facilities	62,351,875	2.99%
Health and Sanitation	353,879,102	17.00%
Public Assistance	632,115,743	30.36%
Education	8,218,983	0.39%
Recreation and Cultural Services	12,834,092	0.62%
Debt Service	14,229,917	0.68%
Appropriation for Contingencies – general purpose	28,467,064	11.37%
Provision for Reserves and Designation	61,973,136	2.98%
<i>Total Spending Requirements</i>	<i>\$2,081,970,191</i>	<i>100.00%</i>

SOURCE: Kern County, 2016.

1

2 **3.14.3.4 Environmental Justice**

3 This EIS/EIR section provides analysis using a demographic screening evaluation to determine  
 4 whether a minority and/or low-income population exists within two potentially affected study areas.  
 5 The project site is within Census Tract (CT) 57, which includes the entire Air Force base. There  
 6 are no residential uses near the project site within this CT. The primary study area consists primarily  
 7 of CTs 55.06 and 65, which abut the boundaries of the Air Force base, and two Community  
 8 Development Plans (CDP), Rosamond and Mojave, located within a 6-mile radius beyond the site  
 9 boundary. This radius is consistent with the geographic scope of the project’s air quality impacts,  
 10 and is also an appropriate study area for potential hazards and water resources impacts, which are  
 11 likely to be localized and could be experienced disproportionately by one local community  
 12 compared to another. The demographic screening to determine the presence of minority and low-  
 13 income populations is based on information contained in two documents: the Council on  
 14 Environmental Quality (CEQ) “Environmental Justice: Guidance Under the National  
 15 Environmental Policy Act” (CEQ, 1997) and the U.S. Environmental Protection Agency (USEPA)  
 16 “Final Guidance for Incorporating Environmental Justice Concerns in USEPA’s NEPA  
 17 Compliance Analyses” (USEPA, 1998). The screening process relies on 2010 Census data to  
 18 determine the presence of minority and low-income populations.

19 The project site is located within CT 57 in Kern County, within Edwards AFB and approximately  
 20 6 miles southwest of Mojave and 4.5 miles north of Rosamond, both of which are CDPs (U.S.  
 21 Census Bureau, 2010c). The project site is in a generally rural and low density area with sparse  
 22 development. The project site and its immediately adjoining areas to the west and south are within

1 the base and are vacant with no development. There are approximately 30 residences to the north  
2 of the project site within CT 65 and scattered residences to the west in CT 55.06. In addition, based  
3 on the communities identified as being within the study area in Table 3.14-5, data on minority  
4 populations and incidences of poverty are provided for Kern County, Bakersfield, Tehachapi,  
5 California City, and Lancaster. Some of these areas provide a degree of overlap (e.g., CT 55.06 and  
6 Rosamond CDP; CT 65 and Mojave CDP), the purpose of which is to ensure that appropriate  
7 geographic units are examined to avoid artificially diluting or inflating the affected minority  
8 populations (CEQ, 1997).

### 9 **Minority Population**

10 According to the CEQ guidance (1997), minority individuals are defined as members of the  
11 following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of  
12 Hispanic origin; or Hispanic. A minority population, for the purposes of environmental justice, is  
13 identified when the minority population of the potentially affected area is meaningfully greater than  
14 the percentage of the minority population in the general population or other appropriate unit of  
15 geographical analysis (CEQ, 1997), which the purposes of this analysis, would be 20 percent  
16 greater than the minority population of the County as a whole.

17 **Table 3.14-5** presents the minority population composition of the planning areas surrounding the  
18 project site as described above, based on the 2012-2016 American Community Survey 5-Year  
19 Estimates. Total minority population, defined as the total percentage of population from racial or  
20 ethnic groups other than non-Hispanic White, ranges from 32.0 percent in CT 57 to 66.6 percent in  
21 the city of Lancaster. The proportion of total minority population in Kern County as a whole is 64.0  
22 percent. Hispanic and Latino populations make up the majorities of the total minority populations  
23 in these areas, ranging from 12.7 percent in CT 57 to 53.3 percent in Bakersfield CCD. For Kern  
24 County as a whole, the Hispanic and Latino population represents 51.6 percent of the total  
25 population.

26 None of the minority populations would be considered meaningfully greater than the general  
27 population, because, in all planning areas considered, none of them include a minority population  
28 that is 20 percent greater than the minority population of Kern County (U.S. Census Bureau, 2016).  
29 Therefore, none of these planning areas are considered to be a community of concern to the  
30 environmental justice analysis.

### 31 **Low-Income Population**

32 Unlike the CEQ (1997) guidance on minority populations, none of the environmental justice  
33 guidance documents contain a quantitative definition of what proportion of low-income individuals  
34 defines a low-income population. In the absence of guidance, for this analysis, if the proportion of  
35 individuals living under the poverty line within a given community is 150 percent or more than that  
36 of the general population of the County, that community is considered a low-income population.  
37 For the purposes of this analysis, a meaningfully greater low-income population would be a  
38 community with a low-income population of 35.7 percent or greater; or 150 percent or more than  
39 Kern County as a whole.

1 USEPA guidance (1998) recommends use of Census data on poverty income as one indicator and  
2 other local data as may be available. This analysis uses the percentage of individuals with income  
3 below the Census-defined poverty level. The percentage is compared to that of the general  
4 population, and the affected area is included in the analysis if the percentage of low-income  
5 population is meaningfully greater than that of the general population, based on the same thresholds  
6 as in the case of minority population.

7 For this analysis, proportions of people living in poverty were obtained from the 2012-2016  
8 American Community Survey (U.S. Census Bureau, 2010e). The U.S. Census Bureau defines  
9 poverty using standards set by the U.S. Office of Management and Budget's Statistical Policy  
10 Directive 14 (U.S. Office of Management and Budget, 1978; U.S. Census Bureau, 2013).

11 Family income is compared to thresholds that vary according to family size, age, and number of  
12 children under 18 years old. If a family's total income is less than the applicable threshold, then  
13 every person in the family is considered to be in poverty. Poverty thresholds are the same for all  
14 geographic areas and are adjusted annually by the Consumer Price Index.

15 In 2016, the poverty threshold for a single person under 65 years of age was \$12,486 and for a  
16 person 65 years and over was \$11,511. For a four-person family with two children under 18 years  
17 of age, the poverty threshold was \$24,339. Other thresholds are defined for different family sizes  
18 and compositions (U.S. Census Bureau, 2016f).

19 As shown in Table 3.14-5, 26.3 percent of all persons in the Mojave CDP belonged to families with  
20 income below the poverty level (U.S. Census Bureau, 2010e). This was the highest proportion  
21 among planning areas examined for this analysis. By comparison, 7.9 percent of people in CT 55.06  
22 belonged to families with income below the poverty level, 18.3 percent in CT 65, 22.1 percent in  
23 the Bakersfield CCD, 17.3 percent in Tehachapi, 18.3 percent in California City, 12.5 percent in  
24 the Rosamond CDP, and 20.5 percent in Lancaster. However, none of the planning areas included  
25 in this analysis contain a poverty level that is greater than 150 percent of the proportion of families  
26 with income below the poverty level in Kern County as a whole, or 37.5 percent or greater.  
27 Therefore, none are considered communities of concern for environmental justice effects related to  
28 poverty.

1  
2

**TABLE 3.14-5  
 RACIAL AND INCOME CHARACTERISTICS FOR RESIDENTS WITHIN THE STUDY AREA**

	<b>Kern County</b>	<b>CT 57</b>	<b>CT 55.06</b>	<b>CT 65</b>	<b>Bakersfield CCD</b>	<b>City of Tehachapi</b>	<b>California City</b>	<b>Rosamond CDP</b>	<b>Mojave CDP</b>	<b>City of Lancaster</b>
Total Population	871,337	2,700	5,340	3,677	411,089	13,179	13,360	19,672	4,239	159,651
Hispanic or Latino (All Races)	51.6%	12.7%	23.7%	37.1%	53.3%	33.9%	27.4%	35.2%	44.9%	38.5%
Non-Hispanic White	36.0%	68.0%	59%	45.4%	33.9%	53.2%	42.8%	44.2%	35.2%	33.4%
Non-Hispanic Black or African American	5.2%	10.2%	1.3%	9.8%	6.5%	7.3%	20.7%	10.2%	16.7%	20.8%
Race, alone or in combination with one or more other races:										
White	77.1%	80.9%	91.2%	80.5%	73.6%	84.4%	67.5%	70.4%	56.3%	66.9%
Black or African American	6.5%	16.7%	1.7%	11.9%	8.0%	8.2%	24.2%	12.6%	21.0%	23.4%
American Indian and Alaska Native	2.2%	1.1%	8.3%	6.5%	2.4%	2.4%	4.2%	3.3%	0.8%	1.6%
Asian	5.5%	2.9%	7.6%	3.2%	4.8%	2.6%	5.4%	6.2%	0.5%	5.1%
Native Hawaiian and Other Pacific Islander	0.5%	0.1%	0%	0.2%	0.4%	0.4%	0.8%	0.6%	0.9%	0.6%
Some Other Race	11.9%	5.6%	1.9%	4.3%	14.5%	4.4%	5.5%	14.3%	22.1%	7.5%
Percent Total Minority (Other Than Non-Hispanic White)	64.0%	32.0%	41.0%	54.6%	66.1%	46.8%	57.2%	55.8%	64.8%	66.6%
Percent of People Below Poverty Level	19.2%	8.0%	7.9%	18.3%	22.1%	17.3%	18.3%	12.5%	26.3%	20.5%

NOTES: All population, race, and ethnicity data are from 2012-2016 American Community Survey 5-Year Estimates; data on poverty level from American Community Survey (most recent data, as applicable).

SOURCE: U.S. Census Bureau, 2016a, 2016b, 2016c, 2016d, 2016e.

3

## 3.14.2 Environmental Consequences

This EIS/EIR section describes the environmental consequences relating to population and housing, socioeconomics and environmental justice issues for the project. It describes the methods used to determine the effects of the proposed project and lists the thresholds used to conclude whether an effect would be significant.

### 3.14.2.1 Assessment Methods/Methodology

#### ***Socioeconomics***

CEQ's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508; reprinted in CEQ, 2005) provides standards for addressing social and economic effects in preparing an environmental impact statement.

Consistent with these regulations, this analysis of socioeconomic impacts will examine impacts of the project and alternatives with respect to the following issues:

1. Housing availability and the character of local communities that may result from employment of workers for construction, operation, and decommissioning;
2. Employment and the economy of Kern County, California, from spending and employment by the project; and
3. Revenues of Kern County government, which would provide local public services to the project.

The analysis of potential socioeconomic effects of the proposed project takes place in the context of physical effects related to population and housing. An input-output economic model (IMPLAN) was used to estimate the indirect and induced economic impacts from construction operation, maintenance, and decommissioning of the project (ESA, 2014).

CEQA Guidelines §15382 states: "An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant." Thus, for purposes of CEQA, population growth or displacement of people and/or housing is considered in the context of the construction of new or replacement housing, which could result in physical environmental impacts.

#### ***Environmental Justice***

The USEPA guidance states that an environmental justice analysis should determine if the affected area of minority and/or low-income populations is subject to "disproportionately high and adverse human health or environmental effects" from the implementation of the project. The guidance suggests that a comparative analysis be performed on potential project impacts to the affected population and a reference population to determine the type of high and adverse effects and the extent of disproportionality (USEPA, 1998).

1 For this analysis, an environmental impact was significant to environmental justice if it would result  
2 in any of the effects listed below. These effects are based on common NEPA standards, CEQA  
3 Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice.

### 4 3.14.3 Analysis of Environmental Effects

#### 5 3.14.3.1 Alternative A: 4,000-Acre EUL (Preferred Alternative)

##### 6 **NEPA: Environmental Impacts**

##### 7 **Socioeconomics**

##### 8 **Construction**

9 **Housing.** The Proposed Action could result in socioeconomic impacts primarily due to construction  
10 employment. However, construction would be temporary and is expected to last up to 2 years.

11 The construction workforce may consist of as many as 100 to 450 daily workers during project  
12 construction; the final count of construction workers that would be required for construction of the  
13 solar facility would be determined after the facility layout and capacity is determined. Most  
14 construction workers are expected to come from within Kern County with some coming from  
15 northern Los Angeles County communities such as the city of Lancaster. The Proposed Action is  
16 not expected to result in direct impacts related to the availability of labor within the 1-hour commute  
17 distance, but may result in indirect impacts on labor outside of this area by reducing the number of  
18 workers available to meet other projects' demands. Such potential impacts are described in more  
19 detail in Section 3.14.6, *Cumulative Impacts Analysis*. Because construction would be temporary,  
20 it is not expected that workers from outside the project vicinity would permanently relocate to the  
21 communities in the project vicinity in order to work at the site; therefore, the proposed project is  
22 not expected to contribute to population growth in the local area. Some workers may engage in  
23 "weekly commuting," in which they find temporary or transient housing closer to the job site during  
24 the workweek. It is expected that such workers would seek temporary housing in the local area,  
25 where rental housing as well as hotel or motel rooms would be available.

26 Further, according to the 2010 Census, there were over 3,000 housing units for rent in the  
27 communities within approximately 20 miles of the project site, including Rosamond, Mojave,  
28 Tehachapi, Lancaster, and California City (see Table 3.14-2). Additional temporary housing  
29 opportunities would also be available through hotel rooms, recreational vehicle (RV) facilities,  
30 mobile home sites, and campgrounds in the area. Thus, there would be a sufficient supply of  
31 temporary housing options to accommodate workers who may seek temporary housing near the  
32 jobsite.

33 **Regional Employment and Economy.** Because the project site does not currently support  
34 economic uses, project construction would not displace economic activity, but would be a new  
35 economic development for the study area. The locations from which construction workers would  
36 commute to the site are a key factor determining the extent of potential impacts to the local economy  
37 and communities. Income from employment primarily would benefit the communities in which the  
38 construction workers and their families reside because this is where most household expenditures  
39 occur. Additionally, with an unemployment rate of 8.6 percent in Kern County as of December 2017,

1 employment of construction workers would have a beneficial effect in temporarily reducing  
 2 unemployment. Employment and resulting labor income would also have a beneficial effect as a  
 3 whole. Construction workers' wages and salaries would provide additional income to the area as  
 4 would expenditures within the local and regional study areas for construction materials and services.  
 5 An IMPLAN input-output model was used to estimate the economic impacts of the Proposed Action  
 6 within Kern County based on construction-phase expenditures that would be expected to occur  
 7 within the regional study area. Starting with expenditures or employment for a given project, also  
 8 called *direct* impact, an input-output model represents major inter-industry (i.e., business-to-  
 9 business) transactions in the region of interest, as well as transactions with households, governments,  
 10 and import/export with economies outside the region. Multipliers derived from the model can be  
 11 used to estimate *indirect* impacts (business-to-business, or supplier, transactions following  
 12 expenditures by a project) and *induced* impacts (expenditures by households of workers employed  
 13 by the project and by the chain of suppliers to the project). The sum of direct, indirect, and induced  
 14 impacts represents the total economic or employment impact to the region. For purposes of this  
 15 analysis, Kern County is the region of interest, since almost all workers are expected to come from  
 16 the County. **Tables 3.14-6** and **3.14-7** summarize the IMPLAN analysis findings.

17  
 18

**TABLE 3.14-6  
 PROPOSED ACTION CONSTRUCTION ECONOMIC BENEFITS<sup>1</sup>**

<b>Impact Type</b>	<b>Employment (number of workers)</b>	<b>Labor Income<sup>2</sup></b>	<b>Total Value Added<sup>3</sup></b>	<b>Output<sup>4</sup></b>
Direct Effect	550.0	\$33,494,143	\$49,444,193	\$76,881,907
Indirect Effect	75.2	\$4,405,081	\$7,121,203	\$12,723,456
Induced Effect	153.9	\$6,429,679	\$12,008,489	\$20,139,148
<b>Total Effect</b>	<b>779.1</b>	<b>\$44,328,903</b>	<b>\$68,573,884</b>	<b>\$109,744,512</b>

1. Region is Kern County. Income and output are in 2018 dollars. Values may not add to totals as shown due to rounding. All values are approximate.
2. Labor Income = All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.
3. Value Added = The difference between an industry's or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus (formerly "other value added"). Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to Gross Domestic Product (GDP) made by an individual producer, industry or sector; gross value added is the source from which the primary incomes of the System of National Accounts are generated and is therefore carried forward into the primary distribution of income account.
4. Output = Output represents the value of industry production. In IMPLAN, these are annual production estimates for the year of the data set and are in producer prices. For manufacturers, this would be sales plus/minus change in inventory. For service sectors, production = sales. For retail and wholesale trade, output = gross margin and not gross sales.

SOURCE: ESA, 2018.

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**TABLE 3.14-7**  
**STATE AND LOCAL TAX IMPACTS FROM CONSTRUCTION OF PROPOSED ACTION**

<b>Source</b>	<b>Total Amount</b>
Employee Compensation	\$199,040.00
Tax on Production and Imports	\$2,229,720.00
Households	\$1,672,010.00
Corporations	\$289,957.00
<i>Total</i>	<i>\$4,390,727.00</i>

SOURCE: ESA, 2018.

3 As shown in Tables 3.14-6 and 3.14-7, the total employment impact of project construction is  
4 estimated at 779 jobs, and the total 2-year construction period economic output is estimated at \$109  
5 million. State and local tax impacts from construction of the Proposed Action are estimated at \$4.3  
6 million. Therefore, the Proposed Action would not have an adverse effect on employment or the  
7 economy in the region.

8 **Revenues of Kern County Government.** As shown in Table 3.14-4, intergovernmental revenues  
9 and taxes were the largest sources of County funding, while public protection and public assistance  
10 were the largest expenditures. Local law enforcement, emergency services and other public services  
11 would be provided to the project by Kern County agencies. As described in Mitigation Measure  
12 MM 3.13-1a, the developer shall pay for impacts to countywide public protection, sheriff patrol  
13 and investigation, and fire services. In addition, the developer would work with County staff to  
14 determine how the receipt of sales and use taxes related to the construction of the project would be  
15 maximized. Section 3.13, *Public Services*, for more information. With implementation of  
16 Mitigation Measure MM 3.13-1a, the Proposed Action would not have an adverse effect on  
17 revenues of Kern County Government, affecting local public services.

### 18 **Operation and Maintenance**

19 **Housing.** The total amount of staff required for operation and maintenance of the solar facility  
20 would be determined after the facility design is finalized. However, it is expected to be staffed by  
21 up to 10 full-time employees for operation, maintenance, and security of the solar facility.  
22 Additional maintenance and security personnel would be dispatched to the solar facility, as needed.  
23 In contrast to construction employment, it is expected that these workers would be hired locally or,  
24 if hired from outside the Edwards AFB area, would relocate permanently to the area. Because of  
25 the number of vacant homes in the surrounding area (approximately 1,600 units for sale and  
26 approximately 3,000 units for rent), there would be minimal impact to the local housing supply or  
27 the community, even if all permanent workers were to relocate to the adjacent communities of  
28 Mojave, Rosamond, or California City. Therefore, the local housing supply would be sufficient to  
29 accommodate operation and maintenance of the Proposed Action and no adverse effects to housing  
30 would occur.

1 **Regional Employment and Economy.** The employment of up to 10 workers for the long-term  
 2 operation and maintenance of the new facility would not adversely affect the regional labor market,  
 3 but would instead have a beneficial effect.

4 For input-output analysis, it is estimated that 10 full-time professionals, including production  
 5 technicians and high-voltage technicians, would be hired on a permanent basis. **Tables 3.14-8** and  
 6 **3.14-9** show that, based on this assumption, total employment impacts in the County, including  
 7 direct, indirect, and induced impacts, would be 29 employees, with a total economic output impact  
 8 of approximately \$10.4 million. Operation of the Proposed Action would result in a state and local  
 9 tax impact of approximately \$388,426.

10  
 11

**TABLE 3.14-8  
 PROPOSED ACTION OPERATION ECONOMIC BENEFITS<sup>1</sup>**

Impact Type	Employment (number of workers)	Labor Incomes <sup>2</sup>	Total Value Added <sup>3</sup>	Output <sup>4</sup>
Direct Effect	10	\$2,437,850	\$6,114,242	\$7,786,473
Indirect Effect	7	\$384,030	\$602,951	\$1,164,838
Induced Effect	11	\$476,582	\$890,760	\$1,493,614
<i>Total Effect</i>	29	\$3,298,462	\$7,607,953	\$10,444,925

1. Region is Kern County. Income and output are in 2018 dollars. Values may not add to totals as shown due to rounding. All values are approximate.
  2. Labor Income = All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.
  3. Value Added = The difference between an industry's or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus (formerly "other value added"). Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector; gross value added is the source from which the primary incomes of the System of National Accounts are generated and is therefore carried forward into the primary distribution of income account.
  4. Output = Output represents the value of industry production. In IMPLAN these are annual production estimates for the year of the data set and are in producer prices. For manufacturers this would be sales plus/minus change in inventory. For service sectors production = sales. For retail and wholesale trade, output = gross margin and not gross sales.
- SOURCE: ESA, 2018.

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 13  
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**TABLE 3.14-9  
 STATE AND LOCAL TAX IMPACTS FROM OPERATION OF PROPOSED ACTION**

Source	Amount
Employee Compensation	\$13,160.00
Tax on Production and Imports	\$195,476.00
Households	\$125,229.00
Corporations	\$54,561.00
Total State and Local Tax Impact	\$388,426.00

SOURCE: ESA, 2018.

15

1 **Revenues of Kern County Government.** Effects of Kern County government revenues affecting  
2 public service would be the same as those described for construction above. With implementation  
3 of Mitigation Measure MM 3.13-1a (see Section 3.13, *Public Services*) the Proposed Action would  
4 not have an adverse effect on revenues of Kern County Government, affecting local public services.

5 In addition, the Proposed Action would not indirectly induce substantial population growth by  
6 introducing new source of electricity because, although it would produce additional electricity and  
7 increase service capacity, it is intended to meet the demand for energy that is already projected  
8 based on growth projections for electricity in Southern California Edison's (SCE's) service area.

### 9 **Decommissioning**

10 At the expiration of the 35-year enhanced-use lease (EUL) with the Air Force, the owner would  
11 either extend the EUL or decommission the facility at the project site. Decommissioning would  
12 involve dismantling of the solar modules and footings and removal by truck, and the site would be  
13 converted to other uses in accordance with applicable land use regulations at the time.

14 The workforce and length of time for decommissioning is expected to be similar to or reduced  
15 compared to that of the construction period. It is difficult to forecast housing and employment  
16 conditions 35 or more years into the future; however, based on growth projections shown in  
17 Table 3.14-1, it is expected that the available labor pool would be greater than current conditions.  
18 Similar to construction of the Proposed Action, the temporary decommissioning workforce would  
19 likely come from Kern County or the nearby Los Angeles County community of Lancaster. Many  
20 workers would likely commute to the project site. For workers who choose to commute weekly or  
21 temporarily relocate to the local area during the workweek, it is expected that sufficient numbers  
22 of rental properties and hotel and motel accommodations would be available in the area, and that  
23 the needs of the temporary decommissioning workforce would not have an adverse effect on  
24 housing. No substantial sales or property tax revenues would be generated during or after  
25 decommissioning.

26 In summary, decommissioning of the Proposed Action would not adversely affect housing  
27 availability, employment, or revenues of Kern County government.

### 28 **CEQA: Impact Significance Determination**

29 CEQA Guidelines §15382 states: "An economic or social change by itself shall not be considered  
30 a significant effect on the environment. A social or economic change related to a physical change  
31 may be considered in determining whether the physical change is significant."

32 The project would be significant with regard to population and housing if it would:

- 33 • Induce substantial population growth in an area, either directly (for example, by proposing  
34 new homes and businesses) or indirectly (for example, through extension of roads or other  
35 infrastructure)?
- 36 • Displace substantial numbers of existing housing, necessitating the construction of  
37 replacement housing elsewhere?
- 38 • Displace substantial numbers of people, necessitating the construction of replacement  
39 housing elsewhere?

1 The County determined in the IS/NOP (see Appendix A1) that the proposed project would result  
2 in no impacts related to population and housing under CEQA. Therefore, this issue does not require  
3 further discussion in this EIS/EIR.

#### 4 **Mitigation Measures**

5 No mitigation measures are required.

#### 6 **Level of Significance after Mitigation**

7 No impact.

#### 8 ***Environmental Justice***

9 The environmental justice analysis determined that none of the communities within the study area  
10 are considered to be communities of concern based on the definition of meaningfully greater  
11 minority or low-income populations defined in Table 3.14-5 above. Therefore, the Proposed Action  
12 would not result in human health and environmental adverse effects that would result in  
13 disproportionately high and adverse impacts on local and regional communities of concern  
14 including minority or low-income populations.

#### 15 ***CEQA: Impact Significance Determination***

16 CEQA does not require the analysis of environmental justice impacts and does not provide specific  
17 significance criteria for environmental justice impacts. Consequently, no CEQA significance  
18 determinations have been made for the analysis of environmental justice impacts.

### 19 **3.14.3.2 Alternative B: 1,500-Acre EUL**

#### 20 ***NEPA: Environmental Impacts***

#### 21 ***Socioeconomics***

#### 22 **Construction**

23 Construction of Alternative B would use the same equipment and materials as Alternative A;  
24 however, it is anticipated that the reduction in total project size would result in fewer workers or a  
25 reduction in the duration of construction.

26 Alternative B would result in similar impacts related to housing demand generated by a temporary  
27 increase in workers coming from outside the local project area. As discussed for Alternative A,  
28 there is adequate housing supply available for temporary relocation of the construction labor force  
29 into the project area.

30 It is assumed that construction employment for Alternative B would require slightly fewer workers  
31 than Alternative A, but it is expected that construction employment would result in similar  
32 beneficial effects related to employment in a region that would occur under Alternative A. Any  
33 changes in revenue associated with Alternative B would be similar to those described above for  
34 Alternative A, although with a potentially smaller workforce and smaller project area, an  
35 incremental decrease in construction revenue and expenditures may occur. Therefore, any benefits  
36 could be marginally reduced.

1 **Operation and Maintenance**

2 Because Alternative B would result in a smaller PV facility than Alternative A, it is assumed that  
3 fewer full-time workers would be required for operation and maintenance of Alternative B. Therefore,  
4 the existing housing market is anticipated to be able to accommodate any permanent relocation  
5 required for these positions, and the employment and economic benefits related to operation and  
6 maintenance of the project would be marginally reduced compared to Alternative A.

7 **Decommissioning**

8 The long-term employment and economic effects related to decommissioning activities would be  
9 speculative because future conditions are unknown. However, it is anticipated that  
10 decommissioning of Alternative B would have similar housing and regional employment and  
11 economic effects as decommissioning of Alternative A; although, the beneficial effects would be  
12 marginally reduced due to the smaller PV facility proposed under Alternative B.

13 **CEQA: Impact Significance Determination**

14 CEQA Guidelines Section 15382 states: “An economic or social change by itself shall not be  
15 considered a significant effect on the environment. A social or economic change related to a  
16 physical change may be considered in determining whether the physical change is significant.”

17 As discussed in the IS/NOP that was prepared for the proposed project (see Appendix A1), the  
18 proposed project would have no impacts related to population and housing. As a smaller project,  
19 Alternative B would result in similar no impact determinations related to population and housing  
20 under CEQA. Therefore, this issue does not require further discussion in this EIS/EIR.

21 **Mitigation Measures**

22 No mitigation measures are required.

23 **Level of Significance after Mitigation**

24 No Impact.

25 ***Environmental Justice***

26 As with Alternative A, because there are no communities with meaningfully greater minority or  
27 low-income populations within the study area for the environmental justice analysis, construction,  
28 operation, and decommissioning of Alternative B would not have the potential to result in  
29 disproportionately high adverse impacts on communities of concern. Environmental justice impacts  
30 related to implementation of Alternative B would be similar to those that would occur under  
31 Alternative A and would not have an adverse effect on any low-income or minority population.

32 **CEQA: Impact Significance Determination**

33 As described above under Alternative A, CEQA does not does not require the analysis of  
34 environmental justice impacts; therefore, no CEQA significance determinations have been made  
35 for the analysis of environmental justice impacts.

### 3.14.3.3 Alternative C: No Action/No Project

#### **NEPA: Environmental Impacts**

##### **Socioeconomics**

##### **Construction**

Under Alternative C, the proposed project facility would not be constructed and the site would remain undeveloped. Under this alternative, no construction employment would be generated and no temporary increase in housing demand would occur, nor would the local and regional area experience the employment and economic benefits that would occur under either Alternative A or Alternative B.

##### **Operation and Maintenance**

Under Alternative C, the proposed project facility would not be constructed and the site would remain undeveloped. Under this alternative, no operations-related employment would be generated and the local and regional area would not experience the employment and economic benefits that would occur under either Alternative A or Alternative B.

##### **Decommissioning**

Under Alternative C, the proposed project facility would not be constructed and the site would remain undeveloped. Under this alternative, decommissioning would not be required upon expiration of the EUL and the local and regional area would not experience the employment and economic benefits that would occur related to decommissioning activities under Alternative A or Alternative B.

##### **CEQA: Impact Significance Determination**

CEQA Guidelines Section 15382 states: “An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.”

As discussed above, Alternative C would not result in a physical change to the environment; therefore, no impacts would occur.

##### **Mitigation Measures**

No mitigation measures are required.

##### **Level of Significance after Mitigation**

No Impact.

##### **Environmental Justice**

The No Action/No Project Alternative would not result in any of the impacts described and, therefore, would not have any disproportionately high and adverse impacts to populations in the affected area. No impacts related to environmental justice would occur.

1 **CEQA: Impact Significance Determination**

2 As described above under Alternative A, CEQA does not does not require the analysis of  
3 environmental justice impacts; therefore, no CEQA significance determinations have been made  
4 for the analysis of environmental justice impacts.

5 **3.14.4 Cumulative Impact Analysis**

6 **3.14.4.1 NEPA: Cumulative Environmental Effects and Their**  
7 **Significance**

8 **Socioeconomics**

9 The potential for cumulative socioeconomic impacts exists where the labor demand exceeds the  
10 labor supply, the imbalance results in an influx of workers to fill positions, and the influx results in  
11 the housing demand exceeding the housing supply, which could lead to increased housing prices,  
12 more crowded living situations, and/or poorer living conditions. For example, projects with  
13 overlapping construction schedules and/or operations could collectively result in a demand for  
14 labor that cannot be met by the region’s existing labor pool, which could lead to an influx of  
15 nonlocal workers and possibly their dependents. This population increase could impact social and  
16 economic resources if there are insufficient housing resources and/or infrastructure and public  
17 services to accommodate the new residents’ needs. Accordingly, the analysis below considers  
18 whether the cumulative increase in the demand for labor would result in an adverse cumulative  
19 jobs–housing imbalance in the region.

20 Table 3-1 identifies current and reasonably foreseeable solar and non-solar projects that have been  
21 or could be developed within Kern and Los Angeles counties. While a large number of projects  
22 may be planned, and so considered to be possible for future development, not all of them are  
23 expected to actually be built due to construction funding constraints, schedule, delays, or other  
24 factors. Given the uncertain and challenging economic circumstances facing federal and state  
25 economies as well as private developers, it is far from assured that future funding and other  
26 necessary support will be sufficiently available for all of the proposed projects to be realized within  
27 the projected schedules.

28 As shown in Table 3-1, there are approximately 44 approved or reasonably foreseeable renewable  
29 energy projects in Kern County. In addition, other non-renewable energy projects could require  
30 workers with similar skills to those that would be employed for construction of the proposed  
31 project, including specific plans, landfills, transmission projects and other residential and  
32 commercial developments. The proposed project could contribute to cumulative socioeconomic  
33 conditions in populated areas within a 1-hour commute distance of the approved and reasonably  
34 foreseeable projects that could employ workers from any of the same communities as the project.  
35 The approved or reasonably foreseeable renewable energy projects that may be under construction  
36 during construction of the proposed project, with similar construction worker demands include the  
37 Antelope Valley Solar Project, Beacon Solar, Fremont Valley Preservation Water Bank and Solar  
38 Project, RE Rosamond One and Two, Willow Springs Solar Array, Alta East, Addison Energy  
39 Wind Project, Avalon Wind Energy Project, and the Catalina Renewable Energy Project (see **Table**  
40 **3.14-10**). Several renewable energy projects are or are expected to be operational prior to start of

1 the proposed project, but would contribute to the labor demand during the operation and  
 2 maintenance stage of the proposed project. The cumulative analysis assumes that the renewable  
 3 energy projects listed above (and described in Table 3.14-10) would be under construction within  
 4 the 24-month construction period for the proposed project.

5 The contributions of Alternatives B and C to the cumulative impacts described below would be  
 6 reduced compared to Alternative A in proportion to the reduced workforces.

7 **Construction**

8 Table 3.14-10 shows the currently available data about project construction workforces for the  
 9 projects in the cumulative scenario.

10 **TABLE 3.14-10**  
 11 **CONSTRUCTION AND OPERATIONAL EMPLOYMENT FOR CUMULATIVE SCENARIO RENEWABLE ENERGY**  
 12 **PROJECTS**

Project	Megawatts	Construction Workers	Operational Workers
Antelope Valley Solar Project by Renewable Resources Group	650	650	18
Beacon Solar by Nextera	250	700	10
Fremont Valley Preservation Water Bank and Solar Project	1008 (Water Bank)	843	31
RE Rosamond One and Two	40	480	14
Willow Springs Solar Array by First Solar	160	240	5
Addison Energy Wind Project		250	10
Alta East by Alta	318 MW wind facility with up to 106 wind turbines	262	15
Avalon Wind Energy Project	300	100	13
Catalina Renewable Energy Project	200 MW wind from 134 wind turbines and 150 MW solar from 2,241,000 panels	250	12
<b>Total</b>		<b>3,775</b>	<b>128</b>

SOURCE: Kern County, 2010a, 2010b, 2011a, 2011b, 2012a, 2012b, 2013a, 2013b, 2013c, 2013d, 2014.

13 Because the precise construction schedules for each project are currently unknown, this analysis  
 14 assumes that the construction periods of the renewable energy projects in the cumulative scenario  
 15 would be of similar length to the proposed project (approximately 24 months). Project developers  
 16 would likely seek to minimize the construction occurring during the hottest summer months and  
 17 may therefore stagger their construction periods accordingly. Consequently, some seasonality may  
 18 be expected to occur as developers favor more construction during the region's cooler winter  
 19 months. It is assumed that the construction needs for each of the solar projects would be  
 20 approximately evenly spread throughout the 24-month period for cumulative construction-related  
 21 impacts. Under the extremely improbable circumstance that construction of all planned renewable

1 energy projects listed in Table 3.14-10 happened concurrently, they would require a maximum of  
2 approximately 3,775 construction workers at one time.

3 Because it is likely that not all of the cumulative projects would be under construction for the entire  
4 24-month construction period, the actual cumulative construction workforce would be lower.  
5 However, it is reasonable to assume that other future projects that are not yet known for this  
6 cumulative scenario may begin construction later in this time period.

### 7 **Regional Labor Force Supply**

8 As Table 3.14-3 illustrates, the total work force of skilled construction workers currently living in  
9 Kern County is estimated to be approximately 14,300. This does not take into consideration the  
10 number of skilled construction workers living in northeastern Los Angeles County in the  
11 communities of Lancaster and Palmdale. Future demand for 3,775 construction workers would not  
12 exceed the capacity of the current skilled labor force. In addition, the current unemployment rate  
13 in Kern County is estimated to be 8.6 percent. Applying this rate to the skilled construction workers  
14 in Kern County yields an estimate of approximately 1,300 unemployed construction workers. The  
15 cumulative construction worker demand would represent a greater number than the locally  
16 available labor. Although many of the region's other unemployed residents (not construction  
17 workers) may not be willing or able to acquire the necessary skills required to serve the cumulative  
18 labor demand, many residents could be trained to work on these projects. Further, some of the  
19 construction work would be less specialized and entry-level positions, which may be suitable for  
20 less skilled workers.

21 Some of the regional workforce currently employed in other sectors could also have the capabilities  
22 to qualify for project construction work. In such cases, some job transferring may occur,  
23 particularly because the construction jobs may be relatively well-paid and attractive for many local  
24 residents. The less skilled or desirable jobs vacated by individuals transferring to construction work  
25 could be filled by other less skilled unemployed residents.

### 26 **Housing and Lodging Impacts**

27 Notwithstanding the potential for employed and unemployed non-construction workers to qualify  
28 for the construction jobs of the cumulative scenario, there could be a demand for construction  
29 workers that would exceed the available labor supply within the geographic scope. It is assumed  
30 that those jobs would be filled by workers relocating to the region from elsewhere.

31 Given the numerous variables discussed above, it is difficult to project the extent of future weekly  
32 commuting or other in-migration that would be necessary to meet the future cumulative labor needs  
33 within the region. However, considering that workers may commute from up to 1 hour away, it is  
34 assumed that approximately 2,100 construction workers could require temporary housing in the  
35 local area or within Kern or Los Angeles counties.

36 Based on State Employment Development Department (EDD) data (EDD, 2018b and 2018c), the  
37 skilled construction labor force within Los Angeles County is 138,300 persons and within San  
38 Bernardino County (to the east of the project site) is 108,900 persons. This suggests that there is  
39 likely to be a considerable additional potential labor force available to commute weekly or to

1 relocate temporarily to Kern County, most likely to communities near the proposed project and  
2 other project sites. Consequently, from a broader geographic and labor force perspective, no  
3 significant shortages of adequately skilled construction workers are foreseen, provided that  
4 adequate suitable housing is available for relocating near the work sites.

5 The cumulative influx in construction labor to the County could create demand for temporary  
6 housing that is greater than the existing supply of temporary lodging. As shown in Table 3.14-2,  
7 there were approximately 9,740 vacant rental units available in the local area. Additionally, hotel  
8 and motel rooms may also be available. Assuming that about half of the construction workers might  
9 be willing to share accommodations to save on their lodging costs, the existing local rental units,  
10 hotels, and motels would be able to house all of the remaining construction workers seeking  
11 temporary housing. If these workers were willing to commute up to one hour to the site daily, the  
12 supply of vacant rental units and hotel and motel rooms would substantially increase, and would  
13 be sufficient to temporarily house the approximately 3,775 construction workers that could move  
14 into the area as a result of the cumulative projects; however, any substantial unforeseen increase in  
15 worker demand or decrease in availability of lodging could exceed the capacity of the communities  
16 within the geographic scope to adequately house these workers.

17 In summary, there is a potential for short-term adverse cumulative social and economic impacts  
18 (related to housing availability) in Kern County associated with the demand for skilled construction  
19 labor under the cumulative scenario. Because analysis suggests future construction labor demand  
20 could exceed the existing local work force within Kern County a potential shortage of commuter-  
21 related temporary housing could result. However, this outcome is unlikely because of funding,  
22 permitting, and construction schedule set-backs that often occur. No adverse social or economic  
23 impacts are anticipated related to housing demand.

#### 24 ***Operation and Maintenance***

25 As shown in Table 3.14-3, there are 54,200 workers in the “Trade, Transportation and Utilities”  
26 industry group in Kern County. In the absence of more precise data on available skills, this industry  
27 group is used as the available labor pool for this analysis. Although not all workers in this category  
28 may possess the skills required for solar power plant operation and maintenance, there would be  
29 opportunities for the transferability of other skills, on-the-job and local community college training,  
30 and lower skilled qualification requirements for some of the available jobs. Based on current  
31 unemployment rates of 8.6 percent, it is assumed that approximately 3,775 of these workers would  
32 be available to meet operational labor needs. Therefore, it is not expected that any in-migration of  
33 operational workers would be needed to meet the cumulative scenario’s operational labor need, and  
34 there would be no cumulative impact during operation and maintenance on housing and lodging.

#### 35 ***Decommissioning***

36 Evaluating the proposed project’s cumulative impacts when future facility decommissioning occurs  
37 is highly speculative. Decommissioning is expected to occur after approximately 35 years of  
38 operation. It is not possible to project with confidence the likely future social and economic  
39 conditions of the local and regional study area. Similarly, the extent to which the projects in the  
40 cumulative scenario would undergo decommissioning concurrently is unknown.

1 Nonetheless, decommissioning is expected to require a workforce similar to the construction phase,  
2 and the project is expected to be one of many similar solar projects within Kern County. As such,  
3 its contribution to cumulative social and economic effects would be proportional to its size relative  
4 to the other development projects in the region and the collective size of projects undergoing  
5 decommissioning or construction at that time. Although the cumulative effects of construction  
6 would temporarily increase demand for housing, decommissioning would not likely overlap with  
7 as many projects as construction, and in over 35 years' time, based on regional population growth  
8 trends, it is likely that there would be more local workers and more temporary housing options  
9 available to accommodate decommissioning needs.

### 10 **CEQA: Cumulative Impact Significance Determination**

11 The proposed project would not cause any impacts related to population and housing under CEQA;  
12 therefore, the project would not cause or contribute to any cumulative impacts in this regard.

### 13 **Mitigation Measures**

14 No mitigation measures are required.

### 15 **Level of Significance after Mitigation**

16 No Impact.

## 17 **3.14.4.2 NEPA: Environmental Impacts**

### 18 **Environmental Justice**

19 As described above under Alternatives A through C, the Proposed Action would not result in an  
20 adverse effect on any low-income or minority population. Cumulative effects such as those related  
21 to regional air quality have the potential to affect environmental justice communities within a  
22 region larger than that described for the Proposed Action. As discussed in Section 3.2, *Air Quality*,  
23 construction emissions from the simultaneous construction of multiple cumulative projects within  
24 a 6-mile radius, in conjunction with the Proposed Action, could result in the exceedance of the  
25 Eastern Kern Air Pollution Control District's thresholds for criteria pollutants. However, as  
26 demonstrated in Table 3.14-5, no communities of concern exist within this 6-mile radius. Thus, the  
27 proposed project is not anticipated to result in a disproportionately high or adverse effect on  
28 communities of concern under the cumulative scenario. Further, the Proposed Action and the  
29 cumulative solar projects referenced in Table 3-1 would offset emissions of criteria pollutants that  
30 would otherwise occur from energy consumption from the grid.

### 31 **CEQA: Impact Significance Determination**

32 CEQA does not require the analysis of environmental justice impacts and does not provide  
33 specific significance criteria for environmental justice impacts. Consequently, no CEQA  
34 significance determinations have been made for the analysis of cumulative environmental justice  
35 impacts.

1 **3.14.5 Mitigation Measures**

2 No mitigation measures are recommended to address socioeconomic impacts related to the  
3 Alternative A, Alternative B, or Alternative C.

4 **3.14.6 Residual Impacts after Mitigation**

5 Because neither the Alternative A nor Alternative B requires mitigation measures related to  
6 population and housing, socioeconomic, and environmental justice impacts, residual effects of the  
7 Proposed Action would be the same as the effects described in section 3.14.3 and 3.14.4.



## 3.15 Traffic and Transportation

### 3.15.1 Affected Environment

This EIS/EIR section describes the affected environment and regulatory setting relating to transportation, identifies possible impacts that would result from implementation of the project, and identifies mitigation measures that would reduce these impacts, where applicable. In December 2013, RBF Consulting prepared a traffic study for the Oro Verde Solar Project, which is provided in Appendix B14 (RBF, 2013). Due to the similarity of the proposed project to the previously proposed Oro Verde Solar Project, which was proposed in the same location as the proposed project, (see Section 1.2 of this EIS/EIR for more details about how the Oro Verde Solar Project relates to the Edwards AFB Solar Project), the RBF study is used as a resource for this analysis, but further analysis was conducted by the County and its environmental consultant's registered professional traffic engineer to account for changes to the proposed project (e.g., the number of construction workers). Additionally, in March 2018, Dudek prepared a traffic impact analysis (TIA) for the Gen-Tie Routes for the Edwards AFB Solar Project, which is provided in Appendix B15 (Dudek, 2018). The Dudek TIA looked at a larger study area than did the RBF study, reflecting the gen-tie route options under consideration, but the TIA provided a focused impact analysis for the intersections in the RBF study during the nine-month construction period when construction of the solar facility and gen-tie would overlap. The Dudek TIA is used as a resource for this analysis, to provide a comprehensive analysis of potential environmental impacts to transportation conditions.

### Scoping Issues Addressed

The following is a list of comments related to transportation, which were provided by Caltrans. These issues and concerns are addressed in this section.

- All necessary encroachment permits and transportation permits should be obtained (specifically overhead transmission line at State Route (SR) 14).

### Regulatory Framework

#### State

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on state highways. Kern County is under the jurisdiction of Caltrans District 9. The following Caltrans regulations apply to potential transportation and traffic impacts of the proposed project.

#### California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load).

Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

**California Street and Highway Code, Sections 660-711, 670-695.** Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

1 **Local**

2 **Kern County General Plan**

3 The Kern County General Plan Circulation Element establishes goals, policies and implementation  
4 measures regarding the development of roads in the County and the maintenance of a minimum  
5 Level of Service (LOS) of LOS D.<sup>1</sup> The Plan also includes provisions for monitoring development  
6 applications as they relate to traffic estimates and the existing road network. Project development  
7 shall comply with the requirements of the Kern County Zoning Ordinance, Land Division  
8 Ordinance, and Development Standards. The policies, goals, and implementation measures in the  
9 Kern County General Plan that pertain to traffic and transportation and are applicable to the  
10 proposed project are provided below. The Kern County General Plan contains additional policies,  
11 goals, and implementation measures that are more general in nature and not specific to  
12 development, such as the Proposed Action. These measures are not listed below, but as stated in  
13 Chapter 1, *Introduction*, all policies, goals, and implementation measures in the Kern County  
14 General Plan are incorporated by reference.

15 **Kern County General Plan Chapter 2: Circulation Element**

16 **2.1 Introduction**

17 Goals

18 Goal 4: Kern County will plan for a reduction of environmental effects without accepting  
19 a lower quality of life in the process.

20 Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the  
21 County.

22 **2.3 Highways**

23 **2.3.3 Highway Plan**

24 Goal

25 Goal 5: Maintain a minimum LOS D.

26 Policies

27 Policy 1: Development of roads within the County shall be in accordance with the  
28 Circulation Diagram Map. The charted roads are usually on section and midsection  
29 lines. This is because the road centerline can be determined by an existing survey.

30 Policy 2: This plan requires, as a minimum, construction of local road widths in areas where  
31 the traffic model estimates little growth through and beyond 2010. Where the Kern  
32 County Planning and Natural Resources Department's growth estimates indicate  
33 more than a local road is required, expanded facilities shall be provided. The timing  
34 and scope of required facilities should be set up and implemented through the Kern  
35 County Land Division Ordinance. However, the County shall routinely protect all  
36 surveyed section lines in the Valley and Desert regions for arterial right-of-way.  
37 The County shall routinely protect all midsection lines for collector highways in  
38 the same regions. The only possible exceptions shall be where the County adopts  
39 special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In  
40 the Mountain Region where terrain does not allow construction on surveyed

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<sup>1</sup> Level of service (LOS) is a qualitative measure of the degree of congestion and delay at intersections, using a six-grade system from LOS A (no delay) to LOS F (very long delays).

1 section and midsection lines, right-of-way width shall be the size shown on the  
2 diagram map. No surveyed section and midsection “grid” will comprehensively  
3 apply to the Mountain Region.

4 Policy 3: This plan’s road-width standards are listed below. These standards do not include  
5 State highway widths that would require additional right-of-way for rail transit,  
6 bike lanes, and other modes of transportation. Kern County shall consider these  
7 modifications on a case-by-case basis.

- 8 • Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
- 9 • Arterial [Major Highway] Minimum 110-foot right-of-way;
- 10 • Collector [Secondary Highway] Minimum 90-foot right-of-way;
- 11 • Commercial-Industrial Street Minimum 60-foot right-of-way; and
- 12 • Local Street [Select Local Road] Minimum 60-foot right-of-way.

13 Implementation Measure

14 Measure A: The Kern County Planning and Natural Resources Department shall carry out the  
15 road network policies by using the Kern County Land Division Ordinance and  
16 Zoning Ordinance, which implements the Kern County Development Standards  
17 that include road standards related to urban and rural planning requirements. These  
18 ordinances also regulate access points. The Kern County Planning and Natural  
19 Resources Department can help developers and property owners in identifying  
20 where planned circulation is to occur.

21 *2.3.4 Future Growth*

22 Goal

23 Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year  
24 planning horizon.

25 Policies

26 Policy 2: The County should monitor development applications as they relate to traffic  
27 estimates developed for this plan. Mitigation is required if development causes  
28 affected roadways to fall below LOS D. Utilization of the California  
29 Environmental Quality Act (CEQA) process would help identify alternatives to or  
30 mitigation for such developments. Mitigation could involve amending the Land  
31 Use, Open Space, and Conservation Element to establish jobs/housing balance if  
32 projected trips in any traffic zone exceed trips identified for this Circulation  
33 Element. Mitigation could involve exactions to build offsite transportation  
34 facilities. These enhancements would reduce traffic congestion to an acceptable  
35 level.

36 Policy 4: As a condition of private development approval, developers shall build roads  
37 needed to access the existing road network. Developers shall build these roads to  
38 County standards unless improvements along state routes are necessary then roads  
39 shall be built to California Department of Transportation (Caltrans) standards.  
40 Developers shall locate these roads (width to be determined by the Circulation  
41 Plan) along centerlines shown on the circulation diagram map unless otherwise  
42 authorized by an approved Specific Plan Line. Developers may build local roads  
43 along lines other than those on the circulation diagram map. Developers would  
44 negotiate necessary easements to allow this.

1 Policy 5: When there is a legal lot of record, improvement of access to county, city or State  
2 roads will require funding by sources other than the County. Funding could be by  
3 starting a local benefit assessment district or, depending on the size of a project,  
4 direct development impact fees.

5 Policy 6: The County may accept a developer's road into the County's maintained road  
6 system. This is at Kern County's discretion. Acceptance would occur after the  
7 developer follows the above requirements. Roads are included in the County road  
8 maintenance system through approval by the Board of Supervisors.

9 Implementation Measures

10 Measure A: The County should relate traffic levels to road capacity and development levels.  
11 To accomplish this, the Kern County Roads Department and the Kern County  
12 Planning and Natural Resources Department should set up a monitoring program.  
13 The program would identify traffic volume to capacity ratios and resulting level of  
14 service. The geographic base of the program would be traffic zones set up by Kern  
15 Council of Governments.

16 Measure C: Project development shall comply with the requirements of the Kern County  
17 Zoning Ordinance, Land Division Ordinance, and Development Standards.

18 *2.5.1 Trucks and Highways*

19 The Kern County road network handles a high ratio of heavy truck traffic. State highways carry  
20 most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not  
21 under the direct control of County officials. In as much as this traffic affects County residents and  
22 taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of  
23 California's transportation investment.

24 Goals

25 Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.

26 Goal 2: Reduce potential overweight trucks.

27 Goal 3: Use State Highway System improvements to prevent truck traffic in  
28 neighborhoods.

29 Policies

30 Policy 1: California Department of Transportation (Caltrans) should be made aware of the  
31 heavy truck activity on Kern County's roads.

32 Policy 2: Start a program that monitors truck traffic operations.

33 Policy 3: Promote a monitoring program of truck lane pavement condition.

34 *2.3.10 Congestion Management Programs*

35 State law requires that urbanized counties prepare an annual congestion management program  
36 (CMP). City and county eligibility for new gas tax subventions is contingent upon their  
37 participation in the congestion management program. To qualify for funding provided through the  
38 State Transportation Improvement Program (STIP) or the Federal Transportation Improvement  
39 Program (FTIP), the regional transportation agency must keep current a Regional Transportation  
40 Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to

1 find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic  
2 congestion.

3 The CMP has links with air quality requirements. The California Clean Air Act requires that cities  
4 and counties implement transportation control measures (TCMs) to attain, and maintain, the State  
5 air quality standard.

6 Goals

7 a) To satisfy the trip reduction and travel demand requirements of the Kern Council of  
8 Government's Congestion Management Program.

9 b) To coordinate congestion management and air quality requirements and avoid multiple and  
10 conflicting requirements.

11 Policies

12 1. Pursuant to California Government Code 65089(a), Kern County has designated Kern Council  
13 of Governments as the County's Congestion Management Agency (CMA).

14 2. The Congestion Management Agency is responsible for developing, adopting, and annually  
15 updating a Congestion Management Plan. The Plan is to be developed in consultation with, and  
16 with the cooperation of, the regional transportation agency (also Kern Council of  
17 Governments), regional transportation providers, local governments, Caltrans, and the air  
18 pollution control district.

19 Implementation Measures

20 a) Kern County Council of Governments should request the proper consultation from County of  
21 Kern to develop and update the proper congestion management program.

22 b) The elements within the Kern Congestion Management Program are to be implemented by each  
23 incorporated city and the County of Kern. Specifically, the land use analysis program, including  
24 the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip  
25 reduction and travel demand strategies are required in the Congestion Management Program.

26 The West Edwards Road Settlement Specific Plan identifies assumptions, goals, policies and  
27 implementation measures that relate to the local collector roads and new development road  
28 improvement standards that apply to the specific plan area.

29 The Mojave Specific Plan establishes objectives, policies and implementation measures for  
30 providing adequate transportation facilities to serve residents, commercial and industrial businesses  
31 in the specific plan area.

32 There are no goals, policies, or implementation measures within South of Mojave-Elephant Butte  
33 Specific Plan that apply to Transportation.

1 The Willow Springs Specific Plan presents goals, policies, and implementation measures that are  
2 not specific to the project but relate to transportation in general, including maintaining adequate  
3 traffic safety, reducing time spent in travel within the plan area, and widening impacted roadways  
4 to handle increased traffic generated by new development.

5 There are no goals, policies, or implementation measures within the Actis Interim Rural  
6 Community Plan that apply to Transportation.

### 7 **2014 Regional Transportation Plan**

8 The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments  
9 (COG) and was adopted on June 19, 2014. The 2014 RTP is a 26-year blueprint that establishes a  
10 set of regional transportation goals, policies, and actions intended to guide development of the  
11 planned multimodal transportation systems in Kern County. It was developed through a continuing,  
12 comprehensive, and cooperative planning process, and provides for effective coordination between  
13 local, regional, state, and federal agencies. New to the 2014 RTP, California's Sustainable  
14 Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include  
15 a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from  
16 passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita  
17 by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS  
18 with the Regional Housing Needs Allocation (RHNA), ensuring consistency between low-income  
19 housing need and transportation planning. The 2014 RTP exceeds SB 375 reduction targets for the  
20 region and is consistent with the RHNA. Kern COG has placed a greater emphasis on sustainability  
21 and integrated planning in the 2014 RTP/SCS.

22 The intent of the SCS is to achieve the state's emissions reduction targets for automobiles and light  
23 trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and  
24 safer quality of life for community members in Kern County. The RTP/SCS seeks to improve  
25 economic vitality, improve air quality; improve the health of communities, improve transportation  
26 and public safety, promote the conservation of natural resources and undeveloped land, increase  
27 access to community services, increase regional and local energy independence, and increase  
28 opportunities to help shape the community's future.

29 The 2014 RTP/SCS financial plan identifies how much money is available to support the region's  
30 transportation investments. The plan includes a core revenue forecast of existing local, state, and  
31 federal sources, along with funding sources that are considered to be reasonably available over the  
32 time horizon of the RTP/SCS. These new sources include adjustments to state and federal gas tax  
33 rates based on historical trends and recommendations from two national commissions (National  
34 Surface Transportation Policy and Revenue Study Commission and National Surface  
35 Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local  
36 transportation impact fees, potential national freight program/freight fees, future state bonding  
37 programs, and mileage-based user fees (Kern COG, 2014).

## 1 **Kern Council of Governments Congestion Management Program**

2 All urbanized areas with a population larger than 200,000 residents are required to have a  
3 Congestion Management System, program, or process. Kern COG refers to its congestion  
4 management activities as the Congestion Management Program (CMP). Kern COG was designated  
5 as the Congestion Management Agency.

6 The CMP provides a systematic process for managing congestion and information regarding  
7 (1) transportation system performance and (2) alternative strategies for alleviating congestion and  
8 enhancing the mobility of persons and goods to levels that meet state and local needs. The purpose  
9 of the CMP is to ensure that a balanced transportation system is developed that relates population  
10 growth, traffic growth and land use decisions to transportation system LOS performance standards  
11 and air quality improvement. The program attempts link land use, air quality, transportation,  
12 advanced transportation technologies as integral and complementary parts of this region's plans and  
13 programs.

14 The purpose of defining the CMP network is to establish a system of roadways that will be  
15 monitored in relation to established LOS standards. At a minimum, all state highways and principal  
16 arterials must be designated as part of the Congestion Management System of Highways and  
17 Roadways. Kern County has 18 designated state highways.

18 The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and  
19 criteria to assist Kern County and affected incorporated cities in addressing compatibility issues for  
20 the proposed project regarding airports and the land uses around them.

## 21 **Environmental Setting**

22 The proposed project would be located in Kern County east of SR 14, near the intersection of SR 14  
23 and SR 58, approximately 7 miles north of the community of Rosamond and 6 miles south of the  
24 community of Mojave. The circulation system in the vicinity of the project is made up of a  
25 combination of state- and county-jurisdiction facilities. Major components of the system are  
26 discussed in the following subsections and shown in Figure 2-1 of Chapter 2, *Project Description*.

### 27 **Regional Setting**

28 The project site is located in proximity to two major highways that would provide access to the  
29 general vicinity of the site. SR 14 and SR 58 could be used to provide regional access to the project  
30 site from the north, east, west, or south.

### 31 **Major Highways**

32 **SR 14** is a four-lane divided highway that aligns north-south within the vicinity of the site. SR 14  
33 extends south from the project site through Rosamond, passing through Lancaster and Palmdale,  
34 eventually turning to the southeast toward Santa Clarita. To the north, SR 14 passes west of  
35 Ridgecrest, eventually merging with SR 395 to the northeast.

36 **SR 58** is a four-lane divided highway that runs generally east-west across Kern County, connecting  
37 Bakersfield, Tehachapi, and Mojave to Lenwood and Barstow to the east. In the project vicinity SR

1 58 bypasses Mojave, but a connector is also provided which intersects SR 14 northwest of the  
2 project site.

3 Interstate Highway 5 (I-5) is a major four-lane divided freeway that covers the entire country north-  
4 south and provides access for goods movement, shipping, and travel. This highway crosses through  
5 the western portion of Kern County and is designated as an arterial/major highway by the Kern  
6 County General Plan Circulation Element. The site is located approximately 50 miles east of I-5.

7 **Alternative Transit Facilities**

8 Public transportation in Kern County is provided by Kern Regional Transit, which offers 16 fixed  
9 routes throughout the county and a dial-a-ride general public transportation service for residents in  
10 Frazier Park, Kern River Valley, Lamont, Mojave, Rosamond, and Tehachapi. No public transit  
11 routes pass or stop near the site.

12 **Non-Motorized Transportation**

13 There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the site or along  
14 the surrounding roadways. The nearest pedestrian and bicycle facilities to the site are located within  
15 the community of Mojave, approximately 6 miles to the northwest of the project.

16 **Local Setting**

17 All vehicles would use SR 14 as regional access to the site via ramps within the Backus Road  
18 interchange. Backus Road is a two-lane undivided roadway that connects with the following  
19 two-lane local roadways to provide the travel path to and from the project site: Sierra Highway,  
20 Sopp Road, and Lone Butte Road. As shown in **Table 3.15-1**, local intersections currently operate  
21 at LOS A (traffic counts were conducted in November 2017).

22 **TABLE 3.15-1**  
23 **SUMMARY OF EXISTING LOS CONDITIONS**

Study Intersection	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS
1. SR 14 Southbound Ramps / Backus Rd	9.0 – A	9.0 – A
2. SR 14 Northbound Ramps / Backus Rd	9.0 – A	9.2 – A
3. Sierra Highway / Backus Rd	8.5 – A	8.5 – A
4. Sierra Highway / Sopp Rd	9.1 – A	9.4 – A

Note: Delay shown in seconds per vehicle.  
SOURCE: Dudek, 2018.

24

25 **3.15.2 Environmental Consequences**

26 This EIS/EIR section describes the environmental consequences relating to transportation for the  
27 proposed project. It describes the methods used to determine the effects of the proposed project and  
28 lists the thresholds used to conclude whether an effect would be significant.

### 3.15.2.1 Assessment Methods/Methodology

The majority of construction vehicle trips would be associated with construction employees traveling to and from the work sites (at the project site and along the gen-tie line corridor) during peak weekday hours. Project construction is expected to rely mostly on Kern County's skilled labor pool; therefore, the project's construction-related traffic is anticipated to be local in nature. It is assumed that construction staff not drawn from the local labor pool would stay in the local hotels in, Rosamond, Mojave, Lancaster, Palmdale or other nearby cities, so the workers would not have to travel far or add traffic to roads outside of the vicinity of the project site.

System and materials delivery trips are anticipated to travel to and from the site during both peak and nonpeak periods. Heavy equipment used at the site would not be hauled to and from the site daily, but would be brought in at the beginning of construction and taken out upon completion of construction.

This traffic impact analysis evaluates the following four unsignalized intersections in the vicinity of the project:

1. SR 14 Southbound Ramps / Backus Road (stop sign on off-ramp)
2. SR 14 Northbound Ramps / Backus Road (stop sign on off-ramp)
3. Sierra Highway / Backus Road (stop sign on Backus Road)
4. Sierra Highway / Sopp Road (stop sign on Sopp Road)

### Determination of Impacts/Thresholds of Significance

For this analysis, an environmental impact was significant related to transportation if it would result in any of the effects listed below. These effects are based on common NEPA standards, CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice. The project would cause a significant impact related to traffic and transportation if it would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit
- Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways, as follows:
  - Metropolitan Bakersfield General Plan LOS C
  - Kern County General Plan LOS D
- Substantially increase hazards due to a design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

1 The County determined in the NOP (see Appendix A1) that the following environmental issue areas  
2 would result in no impacts or less-than-significant impacts and was therefore scoped out of  
3 requiring further review in this EIS/EIR.

- 4 • Conflict with an applicable congestion management program, including, but not limited to  
5 LOS standards and travel demand measures, or other standards established by the county  
6 congestion management agency for designated roads or highways, as follows:
- 7 • Metropolitan Bakersfield General Plan LOS C Conflict with adopted policies, plans, or  
8 programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases  
9 the performance or safety of such facilities.

10 Please refer to Appendix A1 of this EIS/EIR for a copy of the NOP and additional information  
11 regarding these issues.

### 12 3.15.3 Analysis of Environmental Effects

#### 13 **Alternative A: 4,000-Acre EUL (Preferred Alternative)**

##### 14 ***NEPA: Environmental Impacts***

##### 15 **Construction**

16 Construction of Alternative A (solar arrays and gen-tie line to connect to the grid) would generate  
17 vehicle trips by construction workers and material-carrying trucks during the anticipated two-year  
18 construction period. Trip generation forecasts were developed for scenarios occurring under both  
19 peak project construction and project operation. Given the substantially higher level of trip  
20 generation for construction, the peak construction trip generation scenario is considered the  
21 condition for the lifecycle of the proposed project and thus would provide the most conservative  
22 estimate.

23 According to Kern County Ordinance Section 8.36.020, all construction shall be limited to the  
24 hours of 6:00 a.m. to 9:00 p.m. Therefore, construction may occur during a.m. peak (7:00 to  
25 9:00 a.m.) or p.m. peak (4:00 to 6:00 p.m.) commute periods.

26 The onsite assembly and construction workforce is estimated to reach a peak of approximately  
27 550 workers; the construction workforce for the gen-tie line is estimated to reach a peak of  
28 approximately 72 workers. Construction of the gen-tie line would overlap with the peak  
29 construction period of the solar array during a nine-month period, and the combined workforce  
30 during concurrent construction of the solar array and gen-tie line during that period is the focus of  
31 the impact analysis presented below. This analysis conservatively assumes all construction-related  
32 employees would arrive at their work sites during the a.m. peak hour and depart the sites during  
33 the p.m. peak hour, and that there would be limited carpooling activity to and from the project site  
34 by construction workers. Water usage for dust control during construction is estimated to require  
35 up to 50 trucks (100 one-way trips) per day, and materials delivery trucks (for solar array and gen-  
36 tie construction) are estimated at up to 640 one-way trips per day. It is assumed that the great  
37 majority of trucks trips would occur outside the peak traffic hours.

1 As shown in **Table 3.15-2**, construction-related activity associated with the proposed project is  
 2 forecast to generate up to approximately 1,956 daily trips, which include approximately 644 a.m.  
 3 peak-hour trips and approximately 644 p.m. peak-hour trips.

4 Based on review of the project’s planned site access, nearby circulation facilities, and proximity to  
 5 urbanized communities, it is assumed that approximately 85 percent of the project-generated trips  
 6 would travel to/from the south, and 15 percent would travel to/from the north. Therefore,  
 7 approximately 548 peak-hour construction trips are forecast to travel to/from the south and 96 trips  
 8 to/from the north. During the period of overlapping construction, construction workers and trucks  
 9 would travel to/from the project sites (solar array and gen-tie line options east of SR 14) using  
 10 SR 14 at Backus Road, along Sierra Highway to Sopp Road, and along Lone Butte Road to the  
 11 project sites.

12 **TABLE 3.15-2**  
 13 **CONSTRUCTION-RELATED PEAK TRIP GENERATION**  
 14 **(DURING THE NINE-MONTH PERIOD OF CONCURRENT CONSTRUCTION OF SOLAR ARRAY AND GEN-TIE LINE)**

Trip Generation Source	AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips
	In	Out	Total	In	Out	Total	
Onsite Employees	608	0	608	0	608	608	1,216
System/Materials/Water Delivery	18	18	36	18	18	36	740
<b>Total</b>	<b>626</b>	<b>18</b>	<b>644</b>	<b>18</b>	<b>626</b>	<b>644</b>	<b>1,956</b>

SOURCE: ESA, 2018; Dudek, 2018.

15  
 16 The traffic assessment for Alternative A evaluates LOS conditions without and with project  
 17 construction traffic at four intersections. LOS is a qualitative measure (with six grades, A to F) of  
 18 the degree of congestion and delay at intersections. For example, according to the Highway  
 19 Capacity Manual, LOS A occurs on at an unsignalized intersection when the average stopped delay  
 20 is no more than 10.0 seconds per vehicle stopped on the side street at that intersection  
 21 (Transportation Research Board, 2000). **Table 3.15-3** presents descriptions of LOS A through F.

22

1  
2

**TABLE 3.15-3  
 LEVEL OF SERVICE DESCRIPTIONS**

LOS	Description
A	No delay for stop-controlled approaches.
B	Operations with minor delay for stop-controlled approaches.
C	Operations with moderate delays for stop-controlled approaches.
D	Operations with increasingly unacceptable delays for stop-controlled approaches.
E	Operations with high delays, and long queues for stop-controlled approaches.
F	Operations with extreme congestion and with very high delays and long queues unacceptable to most drivers on stop-controlled approaches.

SOURCE: Transportation Research Board, 2000.

3

4 As shown in **Table 3.15-4**, with the addition of project construction-generated trips, the average  
 5 vehicle delay at all study area intersections would increase, but traffic operations would continue  
 6 at an acceptable LOS during both peak traffic hours, except at the Sierra Highway / Sopp Road  
 7 intersection, which would operate at an unacceptable LOS F during the a.m. peak hour. This would  
 8 be a short-term, direct, adverse impact on transportation conditions. However, after implementation  
 9 of Mitigation Measure MM 3.15-1a for the solar facility portion of the project site as well as  
 10 Mitigation Measures MM 3.15-1b and MM 3.15-2b for the gen-tie portion of the project,  
 11 construction-related impacts would be less than significant. See Section 3.15.5 for mitigation  
 12 measures.

13  
14  
15

**TABLE 3.15-4  
 SUMMARY OF LEVEL OF SERVICE (LOS) CONDITIONS –  
 EXISTING AND EXISTING PLUS ALTERNATIVE A CONSTRUCTION**

Study Intersection	Existing Conditions		Existing with Alternative A Construction		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	
1. SR 14 SB Ramps / Backus Rd	9.0 – A	9.0 – A	10.1 – B	16.3 – C	No
2. SR 14 NB Ramps / Backus Rd	9.0 – A	9.2 – A	28.2 – D	16.4 – C	No
3. Sierra Highway / Backus Rd	8.5 – A	8.5 – A	17.1 – C	8.5 – A	No
4. Sierra Highway / Sopp Rd	9.1 – A	9.4 – A	59.3 – F	25.6 – D	Yes

Notes: Delay shown in seconds per vehicle; SB = Southbound, NB = Northbound. The relative effect of project-generated traffic on LOS (e.g., LOS A to LOS F during the a.m. peak hour, versus LOS A to LOS D during the p.m. peak hour, at the Sierra Highway / Sopp Road intersection) is a function of the directionality of the project trips and the intersection turning movements that would be affected by the project traffic. That is, during the a.m. peak hour, project-generated trips would increase the left turn volume on southbound Sierra Highway, which is more susceptible to delays than the westbound right turns from Sopp Road that the project would increase during the p.m. peak hour.

SOURCES: Dudek, 2018;

16

1 **Operation and Maintenance**

2 Operation and maintenance of Alternative A would consist of equipment inspection, routine  
3 maintenance, and replacement and would occur primarily during daylight hours. As the project's  
4 photovoltaic (PV) arrays would passively produce electricity, maintenance requirements would be  
5 very minimal. Unplanned maintenance would typically be responded to as needed depending on  
6 the event. Approximately up to 24 personnel would be required for ongoing operation,  
7 maintenance, and security.

8 During project operations, routine washing of the PV modules is not anticipated to be required;  
9 however, the PV panel surfaces may be washed seasonally to increase the average optical  
10 transmittance of the flat panel surface. Panel washing is not expected to exceed three times per  
11 year, but operational decisions regarding panel washing would be made based upon real-time  
12 conditions, and there may be years where no panel washing is required. Additional water delivery  
13 would be needed once per year to supply water to those buildings with sinks and toilets.

14 Post-project construction traffic volumes (without project operation and maintenance trips) were  
15 derived by applying an annual growth rate of 3.27 percent per year (based on historical traffic  
16 counts maintained by Caltrans) to existing traffic volumes to account for background and  
17 cumulative growth. Traffic operating conditions at all study intersections would be LOS A without  
18 or with Alternative A. Operation and maintenance of Alternative A would cause a less-than-  
19 significant impact on transportation conditions; no mitigation measures would be required.

20 **Decommissioning**

21 Prior to decommissioning, a decommissioning environmental impact analysis will be completed to  
22 assess how all site improvements should be dismantled and removed from the site consistent with  
23 the lease.

24 ***CEQA: Impact Significance Determination***

25 **Impact 3.15-1: The project would conflict with an applicable plan, ordinance or policy**  
26 **establishing measures of effectiveness for the performance of the circulation system,**  
27 **including but not limited to intersections, streets, highways and freeways, pedestrian and**  
28 **bicycle paths, and mass transit.**

29 As discussed in the NEPA analysis, above, construction, operation and maintenance, and  
30 decommissioning activities associated with the proposed project would increase traffic volumes on  
31 area roadways, and project construction-and decommissioning-generated traffic would cause traffic  
32 conditions to degrade to an unacceptable LOS at one of the study intersections. That change in LOS  
33 would be considered a significant impact, requiring measures to mitigate the impacts to a less-than-  
34 significant level. Impacts under project operation and maintenance would be less than significant;  
35 no mitigation would be required.

36 **Mitigation Measures**

37 Not required but suggested implementation of Mitigation Measures 3.15-1a and 3.15-1b (see  
38 Section 3.15.5 for mitigation measures).

1 **Level of Significance after Mitigation**

2 Impacts would be less than significant.

3 **Impact 3.15-2: The project would conflict with an applicable congestion management**  
4 **program, including but not limited to level of service standards and travel demand measures,**  
5 **or other standards developed by the County congestion management agency for designated**  
6 **roads or highways.**

7 As discussed above for Impact 3.15-1, the four intersections in the vicinity of the project site would  
8 maintain an acceptable LOS throughout construction, operation, and decommissioning of the  
9 proposed project, with the exception of the Sierra Highway / Sopp Road intersection during the  
10 a.m. peak hour, and the LOS at that intersection would exceed Kern County LOS thresholds, and  
11 the project would not be in compliance with established Kern County General Plan LOS Standards.  
12 Therefore, the traffic created by the proposed project during the construction and decommissioning  
13 phases would result in a substantial increase in congestion, and impacts would be significant,  
14 requiring measures to mitigate the impacts to a less-than-significant level. During project operation  
15 and maintenance, project-related traffic would not cause the LOS at the study intersections to  
16 exceed the Kern County LOS thresholds, and impacts under lower-trip-generating proposed project  
17 operation and maintenance would be less than significant; no mitigation would be required.

18 **Mitigation Measures**

19 Implement Mitigation Measures MM 3.15-1a, MM 3.15-1b, and 3.15-2b (see Section 3.15.5 for  
20 mitigation measures).

21 **Level of Significance after Mitigation**

22 Impacts would be less than significant.

23 **Impact 3.15-3: The project would substantially increase hazards due to a design feature (such**  
24 **as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

25 During construction, the proposed project would require the delivery of heavy construction  
26 equipment and PV solar components using area roadways, some of which may require transport by  
27 oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public  
28 by limiting motorist views on roadways and by the obstruction of space, which is considered a  
29 potentially significant impact.

30 The need for and number of escorts, California Highway Patrol escorts, as well as the timing of  
31 transport, would be at the discretion of Caltrans and Kern County, and would be detailed in  
32 respective oversize load permits. To ensure that construction-related oversize vehicle loads are in  
33 compliance with applicable California Vehicle Code sections and California Street and Highway  
34 Codes applicable to licensing, size, weight, load, and roadway encroachment of construction  
35 vehicles, Mitigation Measure MM 3.15-1a for the solar facility portion of the project site and  
36 Mitigation Measure 3.15-1b for the gen-tie portion of the project, would require that all oversize  
37 vehicles used on public roadways during construction obtain required permits and approval of a  
38 Construction Traffic Control Plan, as well as identify construction delivery times and vehicle travel  
39 routes in advance to minimize construction traffic during a.m. and p.m. peak hours. With Mitigation

1 Measures MM 3.15-1a and MM 3.15-1b, potential impacts would be reduced to a less-than-  
2 significant level.

3 To ensure that the design of any new access and internal site roadways are compliant with all Kern  
4 County regulations and not result in increased hazards, MM 3.15-1a and MM 3.15-2b require the  
5 project proponent to obtain Kern County approval of all proposed access road design prior to  
6 construction. With Mitigation Measures MM 3.15-1a and MM 3.15-2b, potential impacts would be  
7 reduced to a less-than-significant level.

### 8 **Mitigation Measures**

9 Implement Mitigation Measure MM 3.15-1a and MM 3.15-1b (see Section 3.15.5 for mitigation  
10 measures).

### 11 **Level of Significance after Mitigation**

12 Impacts would be less than significant.

### 13 **Impact 3.15-4: The project would result in inadequate emergency access.**

14 The project site is located in a rural area with roadways (existing and to be built as part of the  
15 project) that allow adequate egress/ingress to the site in the event of an emergency. Additionally,  
16 as part of the proposed project, internal access roadways would be constructed. Therefore, the  
17 presence of the proposed project would not physically interfere with emergency vehicle access or  
18 personnel evacuation from the site.

19 The project would not require closures of public roads, which could inhibit access by emergency  
20 vehicles. There are no businesses, residences, or emergency response stations in the immediate  
21 vicinity of the project site; therefore, it is not likely that heavy construction-related traffic or  
22 operational traffic would interfere with emergency response vehicles and personnel in the area. As  
23 described above, increased project-related traffic would not cause a significant increase in  
24 congestion and or significantly worsen the existing service levels at intersections on area roads;  
25 therefore, project-related traffic would not indirectly affect emergency access to the project site or  
26 any other surrounding location. For these reasons, the project would have a less-than-significant  
27 impact on emergency access.

28 While impact would be less than significant, Mitigation Measure MM 3.15-1a for the solar facility  
29 portion of the project site and Mitigation Measure MM 3.15-1b for the gen-tie portion of the project,  
30 which requires the preparation of a construction traffic control plan that requires access for  
31 emergency vehicles to the project site, would provide further assurances for emergency access.  
32 Mitigation Measures MM 3.15-1a and MM 3.15-1b requires the developer obtain Kern County  
33 approval of all proposed access road design prior to construction, further ensuring onsite emergency  
34 access is adequate.

### 35 **Mitigation Measures**

36 Implement Mitigation Measure MM 3.15-1a and MM 3.15-1b (see Section 3.15.5 for mitigation  
37 measures).

1 **Level of Significance after Mitigation**

2 Impacts would be less than significant.

3 **Alternative B: 1,500-Acre EUL**

4 **NEPA: Environmental Impacts**

5 **Construction**

6 Given that Alternative B includes the construction of a solar facility on a site about 60 percent  
 7 smaller than Alternative A, the onsite assembly and construction workforce is estimated to reach a  
 8 peak of approximately 220 workers; like Alternative A, the construction workforce for the gen-tie  
 9 line is estimated to reach a peak of approximately 72 workers. Construction of gen-tie line would  
 10 overlap with the peak construction period of the solar array, and the combined workforce during  
 11 concurrent construction of the solar array and gen-tie line during that overlap period is the focus of  
 12 the impact analysis presented below. Also like Alternative A, it is conservatively assumed that all  
 13 construction-related employees would arrive and depart during the a.m. and p.m. peak hours,  
 14 respectively, that there would be limited carpooling activity by construction workers, and that the  
 15 great majority of truck trips under Alternative B would occur outside the peak traffic hours.

16 Project trip distribution would be the same as for Alternative A. With approximately 267 peak hour  
 17 construction trips travelling to/from the south and 47 trips to/from the north, the addition of project  
 18 construction-generated trips would cause the average vehicle delay at all study area intersections  
 19 to increase slightly, but traffic operations would continue at an acceptable LOS during both peak  
 20 traffic hours (see **Table 3.15-5**). The traffic operation changes would be detectable, but would not  
 21 have an overall effect on transportation conditions.

22 **TABLE 3.15-5**  
 23 **SUMMARY OF LEVEL OF SERVICE (LOS) CONDITIONS –**  
 24 **EXISTING AND EXISTING PLUS ALTERNATIVE B CONSTRUCTION**

Study Intersection	Existing Conditions		Existing with Alternative B Construction		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	
1. SR 14 SB Ramps / Backus Rd	9.0 – A	9.0 – A	9.3 – A	11.5 – B	No
2. SR 14 NB Ramps / Backus Rd	9.0 – A	9.2 – A	9.9 – A	10.4 – B	No
3. Sierra Highway / Backus Rd	8.5 – A	8.5 – A	9.7 – A	8.5 – A	No
4. Sierra Highway / Sopp Rd	9.1 – A	9.4 – A	12.4 – B	10.3 – B	No

Note: Delay shown in seconds per vehicle; SB = Southbound, NB = Northbound.  
 SOURCE: ESA, 2018; Dudek, 2018.

25

26

1 **Operation and Maintenance**

2 Operation and maintenance of Alternative B would be similar to that for Alternative A. Because of  
3 its reduced size relative to Alternative A, up to approximately 12 personnel would be required for  
4 ongoing operation, maintenance, and security. With the lower vehicle trip generation under  
5 Alternative B, traffic operating conditions at all study intersections would be LOS A without or  
6 with Alternative B. Consequently, transportation-related impacts associated with operation and  
7 maintenance of Alternative B would be reduced relative to Alternative A, causing a less-than-  
8 significant impact on transportation conditions; no mitigation measures would be required.

9 **Decommissioning**

10 Because of its reduced size, it is anticipated that decommissioning activities would require fewer  
11 workers and trucks for Alternative B compared to Alternative A. Consequently, transportation-  
12 related impacts associated with decommissioning of Alternative B would be reduced relative to the  
13 decommissioning of Alternative A.

14 **CEQA: Impact Significance Determination**

15 Because Alternative B would result in approximately 40 percent of the physical development of  
16 Alternative A, it is likely that this alternative would result in a reduced construction schedule,  
17 thereby reducing the number of construction workers and trucks, resulting in a reduction in the  
18 vehicle trip generation associated with construction. As discussed above, construction of  
19 Alternative B would have less-severe (indeed less-than-significant) significance conclusions for  
20 the impacts identified for each phase of Alternative B (construction, operation and maintenance,  
21 and decommissioning) as for Alternative A. Mitigation Measure MM 3.15-1a for the solar facility  
22 portion of the project site and Mitigation Measure MM 3.15-1b for the gen-tie portion of the project,  
23 would require that all oversize vehicles used on public roadways during construction obtain  
24 required permits and approval of a Construction Traffic Control Plan, as well as identify  
25 construction delivery times and vehicle travel routes in advance to minimize construction traffic  
26 during a.m. and p.m. peak hours. With Mitigation Measures MM 3.15-1a and MM 3.15-1b,  
27 potential impacts would be reduced to a less-than-significant level. Impacts under project operation  
28 and maintenance under Alternative B would be less than significant; no mitigation would be  
29 required.

30 **Mitigation Measures**

31 Implement Mitigation Measures MM 3.15-1a and MM 3.15-1b (see Section 3.15.5 for mitigation  
32 measures).

33 **Level of Significance after Mitigation**

34 Impacts would be less than significant.

35 **Alternative C: No Action/No Project**

36 **NEPA: Environmental Impacts**

37 Under this alternative, none of the components proposed under Alternative A would be built. If  
38 Alternative C were implemented, there would be no changes to the existing traffic conditions on  
39 area roadways as described previously. As shown in Table 3.15-3, intersections in the study area

1 currently operate at excellent levels of service (LOS A) during the peak traffic hours. There would  
2 be no construction vehicles (workers or trucks), or operation and maintenance employees and  
3 trucks to access the site; therefore, there would be no adverse impacts on transportation conditions  
4 during the construction, operation and maintenance, and decommissioning phases.

5 **CEQA: Impact Significance Determination**

6 Alternative C would result in no impacts to existing transportation conditions on area roadways.

7 **Mitigation Measures**

8 No mitigation measures are required.

9 **Level of Significance after Mitigation**

10 No Impacts

11 **3.15.4 Cumulative Impact Analysis**

12 **NEPA: Cumulative Environmental Effects and Their Significance**

13 The potential for cumulative transportation impacts exists where there are multiple projects  
14 proposed in an area that have overlapping construction schedule and/or project operations that  
15 could affect similar resources. Projects with overlapping construction schedules and/or operations  
16 could result in a substantial contribution to increased traffic levels throughout the surrounding  
17 roadway network. As discussed previously, the addition of project construction-generated trips  
18 (under Alternative A) would cause one of the study area intersections (Sierra Highway / Sopp  
19 Road) to degrade from an acceptable LOS to an unacceptable LOS. This would be a short-term,  
20 direct, adverse impact on transportation conditions; implementation of identified mitigation  
21 measures would reduce the impact to a less-than-adverse effect. The addition of project  
22 construction-generated trips under Alternative B would now cause any of the study area  
23 intersections to degrade from an acceptable LOS to an unacceptable LOS (a less-than-significant  
24 impact on transportation conditions, and no mitigation measures would be required). Operation and  
25 maintenance activity would cause a less-than-significant impact on transportation conditions, and  
26 no mitigation measures would be required. However, cumulative impacts could result if the  
27 project's incremental effect after mitigation were combined with impacts of other past, present, and  
28 reasonably foreseeable future projects.

29 Cumulative impacts from the project would be most intense during project construction. After  
30 construction, there would be minimal trip generation and less-than-significant cumulative impacts  
31 during operation of the project.

32 For purposes of the analysis, the geographic scope for cumulative impacts to transportation and  
33 traffic is Kern County as a whole, but with specific focus on projects within 6 miles of the project  
34 that have been constructed, or are currently under construction, planned, or approved and, in  
35 particular, projects that would generate traffic on the same affected roadway segments as the  
36 project. Related projects within 6 miles of the project are the only ones likely to contribute traffic  
37 to the relevant intersections, if constructed concurrently.

1 Future development within the county, such as other large solar energy projects, would generate a  
2 large number of trips to and from the respective project site, using local roadways. Multiple  
3 projects, including several utility-scale solar and wind energy production facilities, are proposed  
4 throughout Kern County. Many are located, like the project site, in the Mojave Desert. As shown  
5 in Table 3-1, there are solar energy projects proposed within the vicinity of the project site. The  
6 majority of the 35 solar development projects in Kern County have similar transportation  
7 cumulative impacts as the proposed project. Of these 35 projects within the vicinity of the proposed  
8 project, eight have been selected for this analysis that would result in impacts similar to the  
9 proposed project. These projects include Recurrent Energy (RE) Columbia, RE Columbia Two, RE  
10 Columbia 3 (all approved in 2011), RE Rio Grande (approved 2011), RE Rosamond One,  
11 RE Rosamond Two (each approved 2011), High Desert Solar (status unavailable), and Mojave  
12 Solar Park (status unavailable). Similar to the proposed project, the transportation impacts of solar  
13 projects within the vicinity are cumulatively considerable with respect to construction. These  
14 impacts were determined to be high increases in traffic volumes during the temporary construction  
15 periods with minimal operations-related traffic following. However, the impacts from these related  
16 projects were determined to be less than significant with implementation of mitigation measures.  
17 Similarly, impacts from the proposed project in conjunction with surrounding projects have also  
18 been determined to be less than significant with the implementation of mitigation measures. The  
19 significance determination is based on the conclusion that construction of these projects would  
20 result in a potentially short-term, direct, adverse increase in temporary delays and construction  
21 vehicle trips on the local roadway network, but that implementation of Mitigation Measures  
22 MM 3.15-1a for the solar facility portion of the project site and Mitigation Measure MM 3.15-1b  
23 for the gen-tie portion of the project, would reduce the temporary construction traffic impacts of  
24 the proposed project individually, and minimize the project's contribution to cumulative traffic  
25 impacts.

26 As noted, Alternative A would add about 644 peak-hour construction trips to the four analyzed  
27 intersections, which would result in short-term, adverse impacts on the LOS at one of those  
28 intersections. Related projects located within 6 miles of the project site, shown in **Table 3.15-6**,  
29 include RE Columbia, Columbia Two, and Columbia Three solar projects, the RE Rio Grande Solar  
30 Project, and the RE Rosamond One and Rosamond Two solar projects (there is currently  
31 insufficient project description information and associated trip generation data available for other  
32 proposed projects within 6 miles of the project site, such as Mojave Solar Park, and High Desert  
33 Solar by Element Power Project). As shown in Table 3.15-6, construction-related activity  
34 associated with concurrent construction of those related projects and the proposed project is  
35 forecast to generate approximately 2,530 daily trips.

36

1  
2

**TABLE 3.15-6  
ESTIMATED AVERAGE DAILY TRIPS – CUMULATIVE PROJECTS**

<b>Project</b>	<b>Peak number of construction workers</b>	<b>Estimated daily vehicular trips</b>
Edwards AFB EUL Solar Project	622	1,956
RE Columbia, Columbia Two, and Columbia Three solar projects <sup>a</sup>	92	192
RE Rio Grande Solar Project	53	108
RE Rosamond One and Rosamond Two solar projects <sup>b</sup>	119	274
<b>Total</b>	<b>886</b>	<b>2,530</b>

<sup>a</sup> Because these solar projects would be constructed concurrently, the total trip generation for these three proposed solar facilities are reported.

<sup>b</sup> Because these solar projects would be constructed concurrently, the total trip generation for these two proposed solar facilities are reported.

SOURCE: Kern County, 2018.

3

4 The proposed project traffic impact analysis estimates for vehicle trips are conservatively based on  
5 maximum worker trips and factor flexibility into the construction assumptions. Additionally, the  
6 estimates conservatively assume that all worker trips would occur within the two peak traffic hours  
7 (i.e., all workers would arrive during the same hour in the morning and depart during the same hour  
8 in the afternoon). However, this level of vehicle trips would only occur if the pace of construction is  
9 accelerated to make up for schedule deficiencies.

10 Area roadways and intersections currently operate at LOS A, and the described projects’  
11 construction schedules are likely to overlap to some degree and could potentially generate a  
12 significant cumulative increase of 2,530 daily trips on those roads. Cumulative impacts would be  
13 greatest if the peak construction period of all of these projects overlapped. Although this scenario  
14 is unlikely, if it were to occur, it is likely that the LOS of the affected intersections would degrade  
15 to unacceptable service levels of LOS D or worse, given that the project’s adverse impacts to area  
16 intersections. However, Mitigation Measures MM 3.15-1a for the solar facility portion of the  
17 project site and Mitigation Measure MM 3.15-1b for the gen-tie portion of the project, include  
18 measures such as provision of traffic control by flaggers at area intersections. With the  
19 implementation of the proposed mitigation measures, construction of the proposed project would  
20 not result in a cumulative impact related to traffic.

21 Many of the other solar projects listed in Table 3-1 are located a greater distance away from the  
22 proposed project. In addition, future residential development of Kern County would also increase  
23 the overall number of vehicle trips within the County, but those developments also are located  
24 farther away from the proposed project. While the construction schedules for several of these  
25 projects may overlap with that of the proposed project, they are several miles away, and their  
26 construction vehicles are not likely to travel extensively on the road segments that are in the vicinity  
27 of the project site. Although they may use SR 14, much of the traffic created by the cumulative

1 projects is likely to disperse in different directions, using various highways and roadways.  
2 Additionally, the peak construction traffic created by the cumulative projects would be temporary,  
3 and their onsite operations staff would be minimal and would not create considerable permanent  
4 increases to nearby traffic volumes.

5 On the project-level, with implementation of mitigation measures, Alternative A would not create  
6 adverse impacts on transportation conditions. Additionally, Alternative A's contribution to  
7 potential cumulative impacts would be temporary and would fall to nominal levels upon completion  
8 of construction. Therefore, impacts of Alternative A combined with impacts from past, present, or  
9 reasonably foreseeable projects in the vicinity would result in less-than-significant cumulative  
10 impacts related to transportation conditions.

### 11 **CEQA: Cumulative Impact Significance Determination**

12 As discussed previously in the NEPA analysis in this section, construction of the project and related  
13 projects would result in a potentially short-term, direct, adverse increase in temporary delays and  
14 construction vehicle trips on the local roadway network. Cumulative impacts would be greatest if  
15 the peak construction period of all of the area projects overlapped. Although this scenario is  
16 unlikely, if it were to occur, it is likely that the LOS of the affected intersections would degrade  
17 from LOS A to an unacceptable LOS D or worse, given the project's significant impacts to area  
18 intersections. However, implementation of mitigation measures (see Section 3.15.5) includes  
19 measures such as provision of traffic control by flaggers at area intersections. With the  
20 implementation of the proposed mitigation measures, the proposed project's contribution to  
21 potential cumulative impacts would be less than significant.

### 22 **Mitigation Measures**

23 Implement Mitigation Measures MM 3.15-1a, MM 3.15-1b, and MM 3.15-2b (see Section 3.15.5  
24 for mitigation measures).

### 25 **Level of Significance after Mitigation**

26 Cumulative impacts would be less than significant.

## 27 **3.15.5 Mitigation Measures**

### 28 **Solar Facility Mitigation Measures**

29 **MM 3.15-1a: Traffic Control Plan.** Prior to the issuance of construction or building permits, the  
30 project proponent shall:

- 31 1. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works  
32 Department- Development Review and the California Department of Transportation  
33 offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan  
34 must be prepared in accordance with both the California Department of Transportation  
35 Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook  
36 and must include, but not be limited to, the following issues:
  - 37 a. Timing of deliveries of heavy equipment and building materials;
  - 38 b. Directing construction traffic with a flag person;

- 1 c. Placing temporary signing, lighting, and traffic control devices if required, including,  
2 but not limited to, appropriate signage along access routes to indicate the presence of  
3 heavy vehicles and construction traffic;
- 4 d. Ensuring access for emergency vehicles to the project sites;
- 5 e. Temporarily closing travel lanes or delaying traffic during materials delivery,  
6 transmission line stringing activities, or any other utility connections;
- 7 f. Maintaining access to adjacent property; and,
- 8 g. Specifying both construction-related vehicle travel and oversize load haul routes,  
9 minimizing construction traffic during the AM and PM peak hour, distributing  
10 construction traffic flow across alternative routes to access the project sites, and  
11 avoiding residential neighborhoods to the maximum extent feasible.
- 12 2. Obtain all necessary encroachment permits for the work within the road right-of-way or  
13 use of oversized/overweight vehicles that will utilize county maintained roads, which may  
14 require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan  
15 and issued permits shall be submitted to the Kern County Planning and Natural Resources  
16 Department and the Kern County Public Works Department-Development Review.
- 17 3. Prior to construction, the project proponent shall submit engineering drawings of proposed  
18 access road design for the review and approval of the Kern County Public Works  
19 Department.
- 20 4. Enter into a secured agreement with Kern County to ensure that any County roads that are  
21 demonstrably damaged by project-related activities are promptly repaired and, if  
22 necessary, paved, slurry-sealed, or reconstructed as per requirements of the state and/or  
23 Kern County.
- 24 5. Submit documentation that identifies the roads to be used during construction. The project  
25 proponent shall be responsible for repairing any damage to non-county maintained roads  
26 that may result from construction activities. The project proponent shall submit a  
27 preconstruction video log and inspection report regarding roadway conditions for roads  
28 used during construction to the Kern County Public Work Department-Development  
29 Review and the Kern County Planning and Natural Resources Department.
- 30 6. Within 30 days of completion of construction, the project proponent shall submit a post-  
31 construction video log and inspection report to the County. This information shall be  
32 submitted in DVD format. The County, in consultation with the project proponent's  
33 engineer, shall determine the extent of remediation required, if any.

## 34 Gen-tie Mitigation Measures

35 **MM 3.15-1b: Remove Easement Obstructions.** All easements shall be kept open, clear, and free  
36 from buildings and structures of any kind pursuant to Chapters 18.50 and 18.55 of the Kern County  
37 Land Division Ordinance. All obstructions, including utility poles and lines, tees, pole signs, or  
38 similar obstructions, shall be removed from the ultimate road rights-of way in accordance with  
39 Section 18.55.030 of the Land Division Ordinance. Compliance with this requirement is the  
40 responsibility of the applicant/project proponent and may result in significant financial  
41 expenditures.

42 **MM 3.15-2b: Traffic Control Plan.** Prior to the issuance of construction or building permits, the  
43 project proponent shall:

- 1 1. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works  
2 Department- Development Review and the California Department of Transportation  
3 offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan  
4 must be prepared in accordance with both the California Department of Transportation  
5 Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook  
6 and must include, but not be limited to, the following issues:
  - 7 a. Timing of deliveries of heavy equipment and building materials;
  - 8 b. Directing construction traffic with a flag person;
  - 9 c. Placing temporary signing, lighting, and traffic control devices if required,  
10 including, but not limited to, appropriate signage along access routes to indicate  
11 the presence of heavy vehicles and construction traffic;
  - 12 d. Ensuring access for emergency vehicles to the tie-line sites;
  - 13 e. Temporarily closing travel lanes or delaying traffic during materials delivery,  
14 transmission line stringing activities, or any other utility connections;
  - 15 f. Maintaining access to adjacent property; and,
  - 16 g. Specifying both construction-related vehicle travel and oversize load haul routes,  
17 minimizing construction traffic during the AM and PM peak hour, distributing  
18 construction traffic flow across alternative routes to access the gen-tie sites, and  
19 avoiding residential neighborhoods to the maximum extent feasible.
- 20 2. Obtain all necessary encroachment permits for the work within the road right-of-way or  
21 use of oversized/overweight vehicles that will utilize county maintained roads, which may  
22 require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan  
23 and issued permits shall be submitted to the Kern County Planning and Natural Resources  
24 Department and the Kern County Public Works Department-Development Review.
- 25 3. Prior to construction, the project proponent shall submit engineering drawings of proposed  
26 access road design for the review and approval of the Kern County Public Works  
27 Department.
- 28 4. Enter into a secured agreement with Kern County to ensure that any County roads that are  
29 demonstrably damaged by project-related activities are promptly repaired and, if necessary,  
30 paved, slurry-sealed, or reconstructed as per requirements of the state and/or Kern County.
- 31 5. Submit documentation that identifies the roads to be used during construction. The project  
32 proponent shall be responsible for repairing any damage to non-county maintained roads  
33 that may result from construction activities. The project proponent shall submit a  
34 preconstruction video log and inspection report regarding roadway conditions for roads  
35 used during construction to the Kern County Public Work Department-Development  
36 Review and the Kern County Planning and Natural Resources Department.
- 37 6. Within 30 days of completion of construction, the project proponent shall submit a post-  
38 construction video log and inspection report to the County. This information shall be  
39 submitted in DVD format. The County, in consultation with the project proponent's  
40 engineer, shall determine the extent of remediation required, if any.

### 41 3.15.5 Residual Impacts after Mitigation

42 Mitigation Measures MM 3.15-1a, MM 3.15-1b, and MM 3.15-2b would substantially reduce  
43 impacts associated with the delivery of heavy construction equipment, PV solar components, and

- 1 gen-tie line components using area roadways, some of which may require transport by oversize
- 2 vehicles, which can create a hazard to the public by limiting motorist views on roadways and by
- 3 the obstruction of space (considered a potentially significant impact). The measure also requires
- 4 that necessary permits be obtained.
  
- 5 No residual impacts are expected to occur as a result of construction, operation and maintenance,
- 6 and/or decommissioning of the proposed project or as a result of an alternative.

## 3.16 Hydrology and Water Quality

### 3.16.1 Affected Environment

This section of the EIS/EIR describes the affected environment for hydrology and water quality in the proposed project area, including the regulatory and environmental settings. It also describes the impacts on hydrology and water quality that result from implementation of the proposed project and mitigation measures that would reduce impacts. The technical information provided in this section is based in part on the Hydrology and Water Quality Assessment (Appendix B20), the Water Supply Assessment (Appendix B19), and the Preliminary Flood Hazard Assessment (Appendix B16), all prepared by Blue Oak Energy in June 2014. The Federal Emergency Management Agency (FEMA), which is responsible for designating flood risks, has not generated flood zone maps for the entire project area. Instead, the Hydrologic Engineering Calculator (HEC)-1 hydrodynamic modeling software, developed by the U.S. Army Corps of Engineers (USACE) was used to develop preliminary flood zone maps of the project area (Appendix B16).

#### 3.16.1.1 Scoping Issues Addressed

The following comments related to hydrology and water quality were provided by the Regional Water Quality Control Board (RWQCB) and U.S. Environmental Protection Agency (USEPA)—these issues and concerns are addressed in this section.

- If any abandoned water wells are encountered during the construction process, the Land and Water Program should be contacted for destruction permitting procedures.
- The EIS/EIR should include sufficient detail of key project components—particularly post-construction stormwater conveyance, collection, and treatment facilities as well as associated design criteria.
- Design alternatives compatible with low-impact development (LID) should be considered, especially regarding the collection of onsite stormwater runoff and the concentrated discharge of that stormwater to natural drainage channels.
- Where feasible, existing topographic contours should be maintained and existing vegetation should be mowed to help mitigate post construction stormwater impacts.
- A project-specific Stormwater Pollution Prevention Plan (SWPPP) should be developed and prepared for both the construction and post-construction phases of the project.
- The EIS/EIR should identify post-construction stormwater management as a significant project component, and a variety of best management practices (BMPs), in particular the maintenance of native vegetation, should be evaluated.
- All rock slope protection and energy dissipation rip-rap placed within stream channels should be ungrouted and the minimum amount necessary used to provide scour protection.

During Scoping the Air Force also informed the public the project may be constructed within the 100-year floodplain and sought any concerns or comments the public may have.

## 3.16.1.2 Regulatory Framework

### ***Federal***

#### **Clean Water Act**

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. “Clean Water Act” became the Act’s common name with amendments in 1972. Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands.

Section 401 of the CWA directs that any proponent of an action that requires a federal license or permit, such as a Section 404 or National Pollution Discharge Elimination System (NPDES) permit, must obtain a Water Quality certificate from the state water pollution control agency. The certificate certifies that the action complies with state water quality criteria. Also, Section 402 provides requirement for issuance of permits for the discharge of pollutants.

The Rivers and Harbors Action of 1899, 33 U.S. Code Section 401 establishes a program to regulate activities affecting navigable waters of the United States. Section 10 of the Act directs that project proponents must obtain a Sec 10 permit by the USACE for construction, excavation, or deposition of materials in, over, or under navigable waters, or for any work which would affect the course, location, condition, or capacity of those waters.

No waters of the United States are located on the site. Waters of the United States are defined as all waters that can be used for commerce, wetlands, waters that could affect commerce, tributaries of waters that can be used for commerce, and oceans (USEPA, 2017). The USACE has determined that all tributaries to Rosamond, Buckhorn, and Rogers Lakes, excluding Lake Palmdale and tributaries to Lake Palmdale, are non-jurisdictional by the USACE due to the Antelope Valley Watershed being an isolated, intrastate watershed without any surface-water-related commerce (File No. SPB16011-01084-SLP). Because the study area is within the Antelope Valley Watershed, none of the ephemeral drainage features delineated within the study area are under the jurisdiction of the USACE, as further discussed in Section 3.5, *Biological Resources*. Because the drainages onsite do not meet the definition of waters of the United States, the Clean Water Act, which establishes the basic structure for regulating discharges of pollutants into waters of the United States, is not applicable.

#### **Air Force Instruction 32-7064**

In regard to hydrology and water quality, Air Force Instruction (AFI) 32-7064 requires evaluation of compliance with the Clean Water Act and the Rivers and Harbors Act of 1899, as well as the protection of floodplains, floodplain boundary determination per FEMA maps, and assessment of proposed actions within a floodplain (USAF, 2016). AFI 32-7064 as released on November 22, 2016, establishes requirements to manage natural resources on Air Force installations in accordance with applicable federal, state and local laws and regulations.

1 Executive Order 11988, *Floodplain Management*, (24 May 1977) orders federal agencies to avoid  
2 to the extent possible the long and short term adverse impacts associated with the occupancy and  
3 modification of floodplain development wherever there is a practicable alternative. The strategy  
4 will be avoidance of floodplains for all structures and pursuit of a Finding of No Practicable  
5 Alternatives (FONPA) if that strategy is not successful. If property in floodplains is proposed in  
6 real property transactions then the transaction should reference the floodplain areas and identify  
7 applicable protections and other restrictions required by Federal, State or local floodplain  
8 regulations.

## 9 **State**

### 10 **Porter-Cologne Water Quality Control Act - State Water Resources Control Board**

11 The Porter-Cologne Water Quality Control Act pertains to waters of the State, which has a broader  
12 definition than waters of the United States. Waters of the State are defined as “any surface water  
13 or groundwater, including saline waters, within the boundaries of the state” (Water Code Section  
14 13050(e)). The Act requires protection of water quality by appropriate designing, sizing, and  
15 construction of erosion and sediment controls. The Act also requires the development and periodic  
16 review of water quality control plans (basin plans) that identify water quality objectives and  
17 standards as well as designate beneficial uses for California’s major rivers and groundwater basins.  
18 Water quality control plans also provide the technical basis for determining waste discharge  
19 requirements, identifying enforcement actions, and evaluating clean water grant proposals.

20 The Porter-Cologne Act established the State Water Resources Control Board (SWRCB) and  
21 divided California into nine regions, each overseen by an RWQCB. The SWRCB is the primary  
22 state agency responsible for protecting the quality of the state’s surface water and groundwater  
23 supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-  
24 Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d)  
25 to the SWRCB and the nine RWQCBs. Any person discharging waste or proposing to discharge  
26 waste within any region, other than a community sewer system, which could affect the quality of  
27 the waters of the State, must file a report of water discharge (SWRCB, 2017).

28 The SWRCB implementation authority for the Environmental and Sustainability Program (ESP) is  
29 the Lahontan RWQCB. The Water Quality Control Plan for the Lahontan Region sets forth water  
30 quality objectives and standards for the surface waters and groundwaters of the region, including  
31 both designated beneficial uses of water and the narrative and numerical objectives that must be  
32 maintained or attained to protect those uses (LRWQCB, 2016).

33 The SWRCB requires compliance with the Statewide General Waste Discharge Requirements  
34 (WDRs) for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers  
35 to be Outside of Federal Jurisdiction (Order 2004-0004-DWQ) if dredging or fill discharges to  
36 waters of the State would be less than 2/10 of an acre, 400 linear feet, and 50 cubic yards.  
37 Compliance with WDRs means that discharges from project sites cannot cause pollution,  
38 contamination or nuisances (SWRCB, 2004).

39 The SWRCB Water Quality Control Policy for Siting, Design, Operation, and Maintenance of  
40 Wastewater Treatment Systems (Resolution No. 2012-0032) established a statewide, risk-based,

1 tier approach for the regulation and management of onsite wastewater treatment systems (OWTS)  
2 and replacements and sets the level of performance and protection expected from OWTS in order  
3 to avoid water quality degradation and protect public health. The policy is divided into five tiers  
4 and lists standards for existing and replacement OWTS, as well as corrective action requirements  
5 for failing or potentially failing systems (SWRCB, 2012).

## 6 **California Department of Water Resources**

7 The California Department of Water Resources (DWR) is a department within the California  
8 Resources Agency responsible for the State of California’s management and regulation of water  
9 usage.

## 10 **Title 22 of the California Code of Regulations**

11 California Code of Regulations Title 22, Division 4 establishes both maximum contaminant levels  
12 (MCLs) and secondary MCLs that shall not be exceeded in water supplied to the public. This  
13 section is equivalent to the federal Safe Drinking Water Act. Division 4.5 establishes standards for  
14 treatment, storage, and disposal facilities (TSDF) constructed, operated, or maintained within  
15 certain distances of fault lines, floodplains, or the maximum high tide and standards for establishing  
16 groundwater and underground water above the water table zone protection.

## 17 **California Water Code 10912**

18 Section 10912 of the Water Code requires a city or county that determines that a project, as defined,  
19 is subject to the CEQA to identify any public water system that may supply water for the project  
20 and to request those public water systems to prepare a specified water supply assessment. A  
21 “project” that is subject to CEQA requires preparation of a water supply assessment if it is a  
22 proposed industrial facility occupying if they occupy more than 40 acres of land. The proposed  
23 project area encompasses approximately 4,000 acres and therefore a water supply assessment has  
24 been prepared.

## 25 **Sustainable Groundwater Management Act**

26 The Sustainable Groundwater Management Act (SGMA) designated groundwater basins  
27 throughout California as high, medium, or low priority basins as well basins in a state of critical  
28 overdraft. SGMA requires California governments and water agencies utilizing high and medium  
29 priority groundwater basins to stop basin overdraft and restore balanced levels of pumping and  
30 recharge. SGMA requires water agencies to form Groundwater Sustainability Agencies (GSAs) to  
31 manage high and medium priority basins sustainably through the adoption Groundwater  
32 Sustainability Plans (GSPs) for the basins. For critically overdrafted basins, the deadline for  
33 sustainable management is 2040. For the remaining high and medium priority basins, the deadline  
34 for sustainable management is 2042 (DWR, 2019). The Fremont Valley Groundwater Basin  
35 (FVGB) is designated as a low priority groundwater basin under SGMA and is thus not subject to  
36 SGMA requirements (RWMG, 2018).

## 37 **Local**

### 38 **Antelope Valley Integrated Regional Water Management Plan**

39 The Antelope Valley Integrated Regional Water Management Plan (IRWMP) was last updated in  
40 2013 and identifies key existing water-related challenges faced by residents of the Antelope Valley

1 Region, along with projections of how these challenges will change by 2035. The IRWMP provides  
2 a through inventory of possible actions to address the challenges along with their associated costs  
3 and benefits of implementation (AVRWMG, 2013).

4 A groundwater rights adjudication process has been underway for over 15 years to manage the  
5 basin through the Antelope Valley Integrated Regional Water Management Plan, which includes  
6 the project site. The parties to the adjudication include non-governmental overlying users,  
7 appropriative users, nonuser overlying land owners and federally reserved water rights. The case  
8 defines who controls and uses the water in the basin.

9 In May 2011, the Santa Clara Superior Court issued an official decision determining that the  
10 adjudication area is in a state of overdraft and establishing a safe yield for the Basin of 110,000  
11 acre-feet-per-year (AFY), although pumping in the area has ranged up to 150,000 AFY. On  
12 December 23, 2015, Judge Komar issued a final judgment which set in motion court-directed  
13 procedures for on the Directors of the Antelope Valley-East Kern Water Agency (AVEK) to create  
14 a Watermaster Organization empowered to monitor the groundwater basin. In their first meeting of  
15 the year following settlement of long-running litigation over water rights adjudication, AVEK, as  
16 directed by the court, took action to begin the Watermaster transition process. The judgment  
17 specifies that AVEK and Los Angeles County Waterworks District 40 each occupy a seat, along  
18 with another public water supplier to be named later. The Watermaster Board will be tasked with  
19 arriving at a unanimous decision to hire the engineer who will serve as Watermaster Engineer, who  
20 will assign pumping allocations per user that will be metered and monitored on an annual basis.  
21 Any proposal associated with the ESP for pumping of groundwater will be presented to the  
22 Watermaster Engineer for review. Although not anticipated due to the minor amount of water  
23 required for the proposed project, should project water demands exceed the assigned allocation, the  
24 proposed project would not be denied access to groundwater, but may be required to pay a  
25 replenishment fee for pumpage in excess of the user's allocation.

### 26 **Kern County Water Well and Small Water System Programs**

27 The Kern County Public Health Services Department requires consultation regarding the discovery  
28 of any abandoned water wells during project construction. The Kern County Public Health Services  
29 Department's Water Well and Small Water System Programs provide appropriate well destruction  
30 procedures and permits for these activities.

### 31 **Kern County Land Development Regulations**

32 The Kern County Standards and Rules and Regulations for Land Development: Sewage Disposal,  
33 Water Supply, and Preservation of Environmental Health include requirements for developers to  
34 follow pertaining to septic systems; the standards include feasibility testing, minimum lot size,  
35 maximum ground surface grade, minimum setbacks from water wells, surface water bodies,  
36 groundwater, and bedrock.

37 The Kern County Local Agency Management Program for Onsite Wastewater Treatment Systems  
38 requires the Environmental Health Department approval of all new commercial use and multi  
39 dwelling unit OWTS, as well as percolation testing. According to the Program, all new and  
40 replacement OWTS, as well as repairs, must be registered with the Environmental Health

1 Department. Monitoring and reporting requirements to verify adequate performance are  
2 implemented as conditions of the operating permit .

### 3 **Kern County General Plan**

4 The Kern County General Plan’s Land Use, Open Space, and Conservation Element establishes  
5 policies and implementation measures for hydrology and water quality, including ensuring new  
6 developments are not sited on land that is physically or environmentally constrained. Further, the  
7 General Plan would encourage preservation of the floodplain’s flow conveyance, as well as ensure  
8 slope stability, adequate wastewater drainage, and effective sewage treatments in areas with steep  
9 slopes for new development. The General Plan includes goals regarding the protection and  
10 maintenance of watershed integrity, minimization of changes to natural drainage areas, and ensure  
11 that water quality standards are met for existing and future users .

### 12 **Kern County General Plan Chapter 1. Land Use, Open Space, and Conservation** 13 **Element**

#### 14 1.3 Physical and Environmental Constraints

##### 15 Policies

16 Policy 1: Kern County will ensure that new developments will not be sited on land that is  
17 physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map  
18 Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5  
19 Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste  
20 Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development  
21 unless appropriate studies establish that such development will not result in  
22 unmitigated significant impact.

23 Policy 2: In order to minimize risk to Kern County residents and their property, new  
24 development will not be permitted in hazard areas in the absence of  
25 implementing ordinance and programs. The ordinances will establish conditions,  
26 criteria and standards for the approval of development in hazard areas.

27 Policy 3: Zoning and other land use controls will be used to regulate and, in some  
28 instances, prohibit development in hazardous areas.

29 Policy 11: Protect and maintain watershed integrity within Kern County.

##### 30 Implementation Measures

31 Measure D: Review and revise the County’s current Grading Code as needed to ensure that  
32 its standards minimize permitted topographic alteration and soil erosion while  
33 maintaining soil stability.

34 Measure N: Applicants for new discretionary development should consult with the  
35 appropriate Resource Conservation District and the California Regional Water  
36 Quality Control Board regarding soil disturbances issues.

37

1 1.9 Resources

2 Policy

3 Policy 11: Minimize the alteration of natural drainage areas. Require development plans to  
4 include necessary mitigation to stabilize runoff and silt deposition through  
5 utilization of grading and flood protection ordinances.

6 1.10 General Provisions

7 *1.10.6 Surface Water and Groundwater*

8 Policies

9 Policy 33: Water related infrastructure shall be provided in an efficient and cost effective  
10 manner.

11 Policy 34: Ensure that water quality standards are met for existing users and future  
12 development.

13 Policy 40: Encourage utilization of community water systems rather than the reliance on  
14 individual wells.

15 Policy 41: Review development proposals to ensure adequate water is available to  
16 accommodate projected growth.

17 Policy 43: Drainage shall conform to the Kern County Development Standards and the  
18 Grading Ordinance.

19 Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for  
20 construction-related and urban pollutants, as well as alterations of flow patterns  
21 and introduction of impervious surfaces as required by the California  
22 Environmental Quality Act, to prevent the degradation of the watershed to the  
23 extent practical.

24 Policy 46: In accordance with the Kern County Development Standards, tank truck hauling  
25 of domestic water for land developments or lots within new land developments is  
26 not permitted.

27 Implementation Measure

28 Measure Y: Promote efficient water use by utilizing measures such as:  
29 i. Requiring water-conserving design and equipment in new construction;  
30 ii. Encouraging water-conserving landscaping and irrigation methods; and  
31 iii. Encouraging the retrofitting of existing development with water conserving  
32 devices.

33 **Kern County General Plan Chapter 5. Energy Element**

34 Policies

35 Policy 8: The County should work closely with local, State, and federal agencies to assure  
36 that energy projects (both discretionary and ministerial) avoid or minimize direct  
37 impacts to fish, wildlife, and botanical resources, wherever practical.

38 Policy 9: The County should develop and implement measures which result in long-term  
39 compensation for wildlife habitat, which is unavoidably damaged by energy  
40 exploration and development activities.

1 The Mojave Specific Plan establishes policies, goals, and implementation measures regarding new  
2 development and adequate flood control to protect properties in the 100-year floodplain, and  
3 provide sufficient water to meet the existing and projected needs of the community

4 The Soledad Mountain-Elephant Butte Specific Plan identifies policies and implementation  
5 measures in regards to provisions for water supply, stormwater drainage, and compliance with the  
6 applicable Building Codes and requirements of the Public Works Department.

7 The West Edwards Settlement Plan establishes policies and implementation measures for water  
8 quality and drainage plans, ensuring compliance with the California Domestic Water Quality and  
9 Monitoring Regulations and the Kern County Department of Planning and Development Services,  
10 respectively.

11 There are no goals, policies, or implementation measures within the Actis Interim Rural  
12 Community Plan that apply to hydrology and water quality.

### 13 **Kern County Grading Ordinance**

14 The Kern County Grading Ordinance (County Municipal Code Chapter 17.28) requires a permit  
15 for all grading permit be obtained prior to commencement of construction activities. The Kern  
16 County Grading Guidelines specify the necessary actions to comply with the Kern County Grading  
17 Code for developers that require a grading permit for their grading activities. This includes  
18 preparation of grading plans that detail onsite drainage paths, grading plans and devices installed  
19 onsite to minimize runoff, erosion and sedimentation .

### 20 **Kern County Floodplain Management Ordinance**

21 The Kern County Floodplain Management Ordinance (County Municipal Code Chapter 17.48)  
22 requires the use of materials and practices during construction to avoid flood damage, and requires  
23 all new development to include a 1-foot elevation above base flood elevation, and the avoidance of  
24 flood zones by onsite waste disposal systems.

### 25 **Kern County – Applicability of NPDES Program**

26 The Kern County NPDES Applicability form determines which water quality protection measure  
27 requirements apply to different projects (if any). Regardless of whether or not the project discharges  
28 to Waters of the U.S., as long as the potential for stormwater runoff to exit the site exists, the County  
29 still requires developers to have a qualified SWPPP developer (QSD) develop a SWPPP and have  
30 a qualified SWPPP practitioner (QSP) implement associated water quality BMPs during  
31 construction . This requirement is intended to ensure that construction projects do not violate the  
32 water quality objectives and standards contained in the Water Quality Control Plan for the Lahontan  
33 Region.

34 The Kern County Hydrology Manual and Development Standards provide guidelines for  
35 stormwater design and properly designing drainage mitigation features including catch basins,  
36 retention basins, detention basins and levees. Division 4 of the Kern County Development  
37 Standards defined the design volume for basins as runoff from the Intermediate Storm Design  
38 Discharge (ISDD) 5-day rainfall event from the impervious area (Laughlin, 2014).

1 **Fremont Valley Groundwater Management Plan**

2 Although the FVGB is not subject to SGMA requirements as described above, local agencies  
3 developed a Groundwater Management Plan (GWMP) in August 2018 since groundwater is the  
4 primary water supply in the Fremont Valley. The GWMP was designed be revised if necessary to  
5 become a GSP per SGMA requirements in the future. The GWMP was written with the goal of  
6 documenting the groundwater conditions for the groundwater basin that will help inform future  
7 decisions regarding the long-term sustainable management of groundwater resources. The GWMP  
8 predicts that a heavy agricultural growth scenario (15%) could contribute to groundwater basin  
9 overdraft beginning in 2030. To help manage water resources in the face of future growth,  
10 management strategies identified in the GWMP include but are not limited to preventing the  
11 discharge of pollutants into the environment and protecting areas suitable for groundwater recharge  
12 (Woodard & Curran, 2018).

13 **3.16.1.3 Environmental Setting**

14 ***Regional Hydrology***

15 The project site is located within the Antelope Valley Watershed, which has, no outlet to the ocean  
16 (**Figure 3.16-1**). This watershed drains a total of 3,369 square miles (approximately 1,220 square  
17 miles within Los Angeles County, 2,006 square miles within Kern County, and 143 square miles  
18 in San Bernardino County). Approximately 10 percent of land is developed within the watershed.  
19 The watershed lacks defined natural and improved channels outside of the foothills and is subject  
20 to unpredictable sheet flow patterns. Numerous streams originating in the mountains and foothills  
21 flow across the valley floor and eventually pond in the dry lakes on Edwards Air Force Base  
22 adjacent to the northern Los Angeles County line. (LACDPW, 2019). The three dry lakes include  
23 Rogers, Rosamond, and Buckhorn Dry Lakes, all of which are outside of the project site. Surface  
24 runoff that collects in the dry lakes quickly evaporates from the surface, and only a small quantity  
25 of water infiltrates to the groundwater due to the nearly impermeable nature of the playa soils.  
26 Water that does not reach these dry lakes infiltrates into underlying groundwater basins  
27 (AVRWGMG, 2013).

28 Natural surface water features in the project area are ephemeral, meaning that they only convey  
29 flows in direct response to precipitation events. Minor surface waters within the Antelope Valley  
30 Hydrologic Unit, when present, have the following beneficial uses: municipal and domestic;  
31 agricultural supply; groundwater recharge; freshwater habitat; water contact and noncontact water  
32 recreation; commercial and sport fishing; warm freshwater habitat; wildlife habitat; rare,  
33 threatened, or endangered species; and spawning (LRWQCB, 1995).

34 Man-made surface water features in the area are water storage ponds associated with water and/or  
35 wastewater treatment plants as well as recharge facilities. The California Aqueduct is part of the  
36 State Water Project (SWP), which is the nation’s largest state-built water and power development  
37 and conveyance system that includes pumping and power plants, reservoirs, lakes, storage tanks,  
38 canals, tunnels, and pipelines that capture, store, and convey water to 29 contract water agencies  
39 (MWA, 2019).

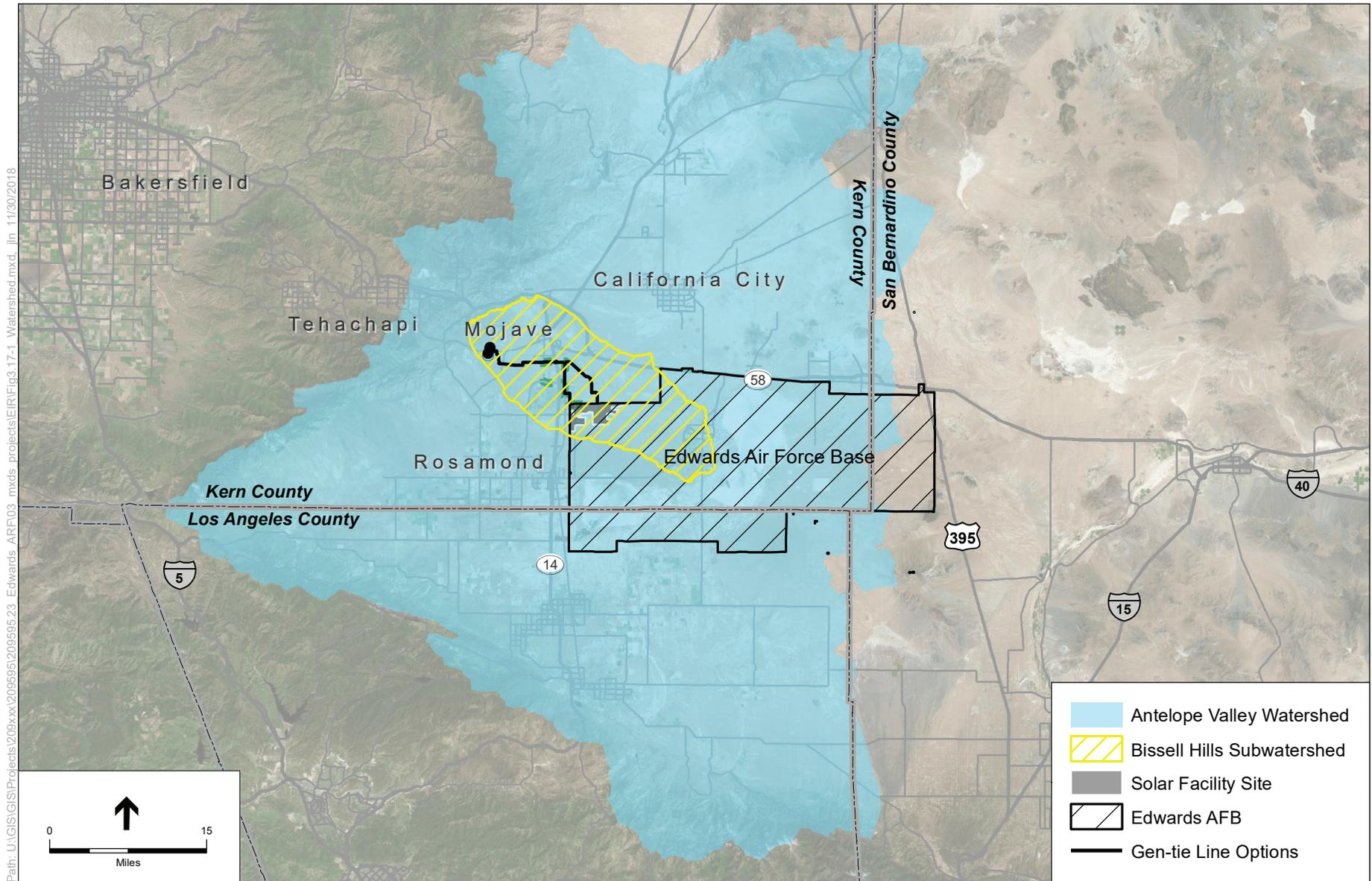


Figure 3.16-1: ANTELOPE VALLEY WATERSHED AND BISSELL HILLS SUBWATERSHED

1 **Onsite Hydrology and Drainage**

2 The project is located within the Bissell Hills Subwatershed of the Antelope Valley Watershed  
3 (Figure 3.16-1), which lacks defined natural and improved channels and is subject to unpredictable  
4 sheet flow. Surface water flows are carried by small ephemeral streams. The contributing surface  
5 flow to the area is primarily precipitation runoff from surrounding higher elevations. The  
6 Preliminary Flood Hazard Assessment determined the watershed area that contributes to the project  
7 site is just over 33,920 acres in size, with a peak runoff for the 2-year and 100-year storm events to  
8 be nearly 260 and 6,200 cubic feet per second (cfs), respectively (Appendix B16). These  
9 estimations were considered high but not unreasonable given the size of the watershed, the  
10 infiltration characteristics of onsite soils, and the rainfall rate and distribution of the 2- and 100-  
11 year storms.

12 The project site at its maximum size (4,000 acres) is gently sloping to the east and elevations range  
13 from 2,440 feet above mean sea level (amsl) to 2,565 feet amsl. When rain events of sufficient  
14 intensity and/or duration to generate surface runoff occur, flow enters the project site from three  
15 directions: north, west, and south from the Bissell Hills, with the bulk of the flow passing through  
16 seven points of inflow along the north and west boundaries (Appendix B16). Analysis of flow  
17 patterns using a two-dimensional model shows that at high flowrates, flow crossing the northern  
18 and western boundaries of the site will be both overland and channelized (Appendix B16). The site  
19 generally slopes from west to east, and acts as a collection zone, with a singular watershed outlet  
20 located on the eastern edge of the site (Appendix B16). The analysis indicates that flow across the  
21 site in the 2-year event would be very shallow (< 3 inches), have very low velocity (< 0.25 feet per  
22 second), and largely confined to defined drainages (Appendix B16). The flow during a 100-year  
23 rain event would be somewhat deeper (as much as 3 feet deep) and faster flowing (3 feet per second)  
24 along the defined channels, but would result in ponding over a substantial portion of the site (up to  
25 35 percent). The area of ponding outside defined channels would generally not be greater than 6  
26 inches in depth (Appendix B16).

27 **Groundwater Resources**

28 This project is located in eastern Kern County at the southern end of the Fremont Valley  
29 Groundwater Basin (FVGB). As defined by DWR (Basin No. 6-46), the FVGB covers an estimated  
30 2,370,000 acres and is bounded to the south and southeast by the Bissell Hills and the Antelope  
31 Valley Groundwater Basin; to the east by crystalline rocks of Red Mountain, the Rand Mountains,  
32 Castle Butte, and the Rosamond Hills; and to the west and north by the Sierra Nevada Mountains,  
33 the Tehachapi Mountains, and the El Paso Mountains (DWR, 2004). The boundary between the  
34 FVGB and the Antelope Valley Groundwater Basin occurs along a groundwater divide  
35 approximated by a line connecting the mouth of Oak Creek through Middle Butte to the exposed  
36 basement rock near Gem Hill and to the southeast of California City.

37 The U.S. Geological Survey (USGS) has divided the FVGB into six subunits that are generally  
38 defined by groundwater flow patterns, recharge characteristics, geographic location, and  
39 controlling geologic structures such as faults or intruding bedrock features (USGS, 1967). Various  
40 strands of the Garlock Fault Zone (which includes the El Paso Fault) and the Muroc Fault both  
41 represent partial barriers to groundwater flow and generally define the boundaries between the

1 Chaffee, California City, Oak Creek, and Koehn Subunits.<sup>1</sup> The boundary between the Chaffee and  
2 Gloster Subunits is defined by consolidated rock of the northern part of the Bissell Hills and the  
3 general east–west line of scattered hills trending through Elephant Butte westward to the Garlock  
4 Fault Zone. Based on low population density, negative growth projections, low numbers of private  
5 and public supply wells, and the lack of irrigated agriculture within the FVGB, it is designated as  
6 a low-priority basin by DWR (DWR, 2004). The project is within the Gloster Subunit of the FVGB.

### 7 **Regional Groundwater Overdraft Conditions and Recharge Activities**

8 Natural recharge of the basin includes percolation of ephemeral streams that flow in from the Sierra  
9 Nevada. The general groundwater flow direction is toward Koehn Lake at the center of the valley,  
10 with no appreciable quantity of groundwater flowing out of the basin (DWR, 2004). Within the  
11 project area, the general pattern of groundwater flow is in a northerly to northeasterly direction  
12 (USGS, 1967). DWR notes historical groundwater level declines in some parts of the basin and  
13 stabilization of groundwater levels in others. The total storage capacity of the basin is calculated to  
14 be 4,800,000 acre-feet (AF), although the current amount of groundwater in storage is unknown  
15 (DWR, 2004). DWR has not identified the basin as being in, or projected to be in, an overdraft  
16 condition, and there is no adjudication applicable to the FVGB (DWR, 2016).

17 The project overlies Quaternary alluvium, which is the most important water-bearing material in  
18 the basin. Site-specific information on the thickness of alluvium underlying the project site is not  
19 known with confidence and varies geographically. Basin-wide, however, alluvial deposits are  
20 thought to be locally in excess of 1,000 feet thick, thinning toward the bed of Koehn Lake, where  
21 alluvium is interbedded with lacustrine deposits that result in locally confined conditions. Average  
22 well yield (for municipal and agricultural wells) reported by DWR within the basin is  
23 approximately 530 gallons per minute (gpm) with a maximum yield of 2,580 gpm (DWR, 2004).  
24 Historically, agricultural activities in the FVGB peaked in the 1970s, with estimated groundwater  
25 extractions reaching up to approximately 60,000 AFY in 1976. Agricultural activities significantly  
26 decreased thereafter; and as of 2010, only 1 percent of lands cultivated in 1976 were still in  
27 production. In 2017, alfalfa and pistachios generated a demand of approximately 410 AF (Woodard  
28 & Curran, 2018).

29 USGS and DWR have measured groundwater levels from three wells on the site, two of which  
30 are still actively monitored for groundwater levels. Water level records for these wells date  
31 back to the late 1960s. The depth to groundwater for all three wells has historically varied  
32 between 35 and 75 feet below the ground surface (bgs), and show a declining long-term trend  
33 (USGS, 2018). Groundwater levels measured in March 2010 from a well within the project  
34 boundary is 49.3 feet bgs (for DWR Well No. 349444N1181360W001) (DWR, 2019).  
35 Groundwater quality within the basin is typically sodium bicarbonate or sodium sulfate in  
36 character. Total dissolved solids content in the basin averages 300mg/L (Appendix B20), which

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<sup>1</sup> Various descriptions and depictions of the local groundwater basin area, specifically within the Antelope Valley Integrated Regional Water Management Plan, indicate that the Gloster Subunit is part of the Antelope Valley Groundwater Basin. Further research, however, shows that the project site is not located within the specific jurisdictional boundary that has been legally established for the Antelope Valley Groundwater Basin adjudication and that the site is located in the FVGB according to DWR Bulletin 118, the best available and authoritative source of basin boundaries in California.

1 meets California drinking water standards (SWRCB, 2010). High levels of boron, nitrates, and  
2 arsenic have been observed within the basin (Appendix B20).

### 3 **Flood Hazards**

4 Portions of the proposed gen-tie route options would pass through Flood Zone A. Zone A is defined  
5 by FEMA as an area with a 1 percent chance of annual flooding, or a 100-year flood zone (FEMA,  
6 2014). The proposed solar facility would be located in Flood Zone D, defined as an area with  
7 possible but undetermined flood hazards since the area has not been analyzed for flood hazards by  
8 FEMA. Some areas immediately adjacent to the proposed solar facility location have a Flood Zone  
9 A designation. The preliminary Flood Hazard Assessment, included as Appendix B16, determined  
10 the boundaries of the 100-year flood zone onsite in accordance with the Kern County Hydrology  
11 Manuals. A substantial portion of the proposed solar facility site is within a flood zone that  
12 continues onto the site from the adjacent FEMA-mapped 100-year flood zones. Thus, although the  
13 area of impact has not been officially mapped by FEMA, Appendix B16 shows that areas within  
14 the project site would likely be located in a 100-year flood zone.

## 15 **3.16.2 Environmental Consequences**

16 This section of the EIS/EIR describes the environmental consequences related to hydrology and  
17 water quality. It describes the methods used to determine the effects of the proposed project and  
18 lists the thresholds used to conclude whether an effect would be significant.

### 19 **3.16.2.1 Assessment Methods/Methodology**

20 The analysis of potential impacts of the Proposed Action and alternatives focuses on possible  
21 impacts to water quality, groundwater levels, drainage, and flooding patterns. Impacts are identified  
22 and evaluated based on relevant lead agency standards, policies, and guidelines. Information  
23 regarding hydrology and water quality was reviewed for this analysis, including the aforementioned  
24 Hydrology and Water Quality Assessment (Appendix B20) and the Preliminary Flood Hazard  
25 Assessment (Appendix B16). The analysis presents the evaluation of the potential for the proposed  
26 project to create risks or cause direct or indirect impacts related to its hydrological setting. This  
27 analysis was conducted by examining preliminary hydrology data, Kern County Planning  
28 documents, geographical information systems, and publically available natural resource maps.

### 29 **3.16.2.2 Determination of Impacts/Thresholds of Significance**

30 For this analysis, an environmental impact was significant if it would result in any of the effects  
31 listed below, which are based on common NEPA standards, CEQA Guidelines Appendix G  
32 (14 CCR 15000 et seq.), and standards of professional practice.

### 33 **NEPA**

34 The following criteria were used to determine the severity and intensity of impacts under NEPA:

- 35 1. Impacts to water resources may be both beneficial and adverse. A significant short-term  
36 adverse effect may exist even if the lead agencies believe that on balance the effect will be  
37 beneficial.

- 1           2. The degree to which the action may adversely affect surface water quality or the existing  
2           drainage pattern of the site and/or downstream areas.
- 3           3. The degree to which the action may adversely affect groundwater quality or the existing  
4           infiltration on the site.
- 5           4. Whether the action would place structures or housing within a flood zone.
- 6           5. Unique characteristics of the geographic area such as proximity to water bodies with  
7           beneficial uses, including wetlands, wild and scenic rivers, and ecologically critical areas,  
8           or proximity to water bodies with water quality impairments.
- 9           6. Whether the action is related to other actions with individually insignificant but  
10          cumulatively significant impacts. Significance exists if it is reasonable to anticipate a  
11          cumulatively significant impact on the environment. Significance cannot be avoided by  
12          termining an action temporary or by breaking it down into small component parts.
- 13          7. Whether the action threatens a violation of federal, state, or local law or requirements  
14          imposed for the protection of the environment.

### 15   **CEQA Thresholds of Significance**

16   The Kern County CEQA Implementation Document and Kern County Environmental Checklist  
17   identify the following criteria, as established in Appendix G of the CEQA *Guidelines*, to determine  
18   if a project could potentially have a significant adverse effect regarding hydrology and water  
19   quality.

20   A project would have a significant adverse effect on hydrology and water quality if it would:

- 21           • Violate water quality standards or waste discharge requirements
- 22           • Substantially deplete groundwater supplies or interfere substantially with groundwater  
23           recharge such that there would be a net deficit in aquifer volume or a lowering of the local  
24           groundwater table level such that the production rate of pre-existing nearby wells would  
25           drop to a level that would not support existing land uses or planned uses for which permits  
26           have been granted)
- 27           • Substantially alter the existing drainage pattern of the site or area, including through the  
28           alteration of the course of a stream or river, in a manner that would result in substantial  
29           erosion or siltation onsite or offsite
- 30           • Substantially alter the existing drainage pattern of the site or area, including through the  
31           alteration of the course of a stream or river, or substantially increase the rate or amount of  
32           surface runoff in a manner that would result in flooding onsite or offsite
- 33           • Create or contribute runoff water that would exceed the capacity of existing or planned  
34           stormwater drainage systems or provide substantial additional sources of polluted runoff
- 35           • Otherwise substantially degrade water quality
- 36           • Place housing within a 100-year flood hazard area as mapped on a federal flood hazard  
37           boundary or flood insurance rate map or other flood hazard delineation map
- 38           • Place within a 100-year flood hazard area structures that would impede or redirect flood  
39           flows

- 1 • Expose people or structures to a significant risk of loss, injury, or death involving flooding,  
2 including flooding as a result of the failure of a levee or dam
- 3 • Contribute to inundation by seiche, tsunami, or mudflow

4 The County determined in the Notice of Preparation/Initial Study (NOP/IS) (see Appendix A1) that  
5 the proposed project would result in no impact to the environmental issue areas listed below. These  
6 issue areas were therefore scoped out of requiring further review in this EIS/EIR.

- 7 • Place housing within a 100-year flood hazard area as mapped on a federal flood hazard  
8 boundary or flood insurance rate map or other flood hazard delineation map
- 9 • Expose people or structures to a significant risk of loss, injury, or death involving flooding,  
10 including flooding as a result of the failure of a levee or dam
- 11 • Contribute to inundation by seiche, tsunami, or mudflow

12 Please refer to Appendix A1 of this EIS/EIR for a copy of the NOP/IS and additional information  
13 regarding these issue areas.

### 14 3.16.3 Analysis of Environmental Effects

#### 15 3.16.3.1 Alternative A: Up to 4,000-Acre EUL (Preferred Alternative)

##### 16 *NEPA: Environmental Impacts*

##### 17 **Existing and Adjacent Water Bodies Onsite**

18 The drainages on the project site are ephemeral washes and do not have any existing water quality  
19 impairments (SWRCB, 2012). Rogers Dry Lake is downstream from the project area and does have  
20 beneficial uses; however, under prevailing conditions, water onsite likely evaporates or infiltrates  
21 prior to establishing a hydrological connection to Rogers Dry Lake. Only under extreme flood  
22 scenarios would runoff from the site and surrounding areas reach Rogers Dry Lake east of the  
23 project site.

##### 24 **Construction and Decommissioning**

##### 25 **Surface Water Quality and Drainage Patterns**

26 Construction and decommissioning of the project could impact water quality through erosion and  
27 sedimentation resulting directly from earthwork or an alteration in drainage pattern caused by  
28 earthwork. Construction and decommissioning would also require the use of chemicals that could  
29 be harmful if improperly managed and inadvertently released to surface waters or (indirectly) to  
30 groundwater. The project site is relatively flat, indicating low erosion potential. In addition, the  
31 developer plans to implement the “mow and roll” technique of site preparation, which allows for a  
32 significant reduction in the extent of rough grading and related dust control needs. Instead of  
33 conducting vegetation clearing and mass grading across the whole site, limited grading necessary  
34 to establish construction staging areas; site access roads; inverter pads; utility trenches; building  
35 pads for on-base substation, switchyards and the operations and maintenance (O&M) building; and  
36 discreet areas where leveling may be needed for pile installation would be conducted. In order to  
37 access locations for vibratory piles placed for solar racking, vegetation would be mowed, leaving  
38 roots intact and aboveground vegetation rolled over only to the extent necessary for construction

1 equipment to access the construction site. In addition to maintaining natural vegetation where  
2 possible, the developer also would employ dust suppressants and palliatives when necessary within  
3 inactive areas of the construction site thus reducing the amount of water spraying needed. Potential  
4 impacts from construction-related activities would generally be short term and of limited duration  
5 given the 2-year construction period and the rarity of significant rainfall on the site. Dust  
6 suppressants can be used to help mitigate wind erosion blowing dust during high wind speed events.

7 In addition to construction practices that minimize the potential for substantial soil erosion,  
8 implementation of a SWPPP would be required during both construction and decommissioning per  
9 Mitigation Measure MM 3.16-1a for the solar facility portion of the project site and Mitigation  
10 Measure MM 3.16-1b for the gen-tie portion of the project site. This would include erosion and  
11 sediment control BMPs, such as vegetation preservation and sandbags, which should help prevent  
12 the occurrence of erosion or siltation onsite. Non-stormwater and post-construction BMPs would  
13 also be implemented to prevent discharge of construction-related pollutants (sediment, oil, etc.)  
14 that could contaminate nearby drainages. The developer would also be required to comply with the  
15 Kern County Grading Ordinance and would prepare a SWPPP that includes erosion control  
16 measures, the location of which would be required to be displayed in the grading plans per  
17 Mitigation Measure MM 3.16-3a for the solar facility portion of the project site and Mitigation  
18 Measure MM 3.16-3b for the gen-tie portion of the site. Reduction of erosion would avoid  
19 degradation of water quality..

20 With implementation of Mitigation Measures MM 3.16-1a, MM 3.16-1b, MM 3.16-3a, and  
21 MM 3.16-3b, the impact of project construction and decommissioning on water quality would be  
22 minor and less than significant.

### 23 Groundwater Quality and Infiltration

24 The project does not propose the use of onsite groundwater wells for construction, and therefore,  
25 there would be no localized impacts to the underlying groundwater table in the form of decreased  
26 groundwater levels or a decrease in the amount of groundwater stored. Furthermore, the project site  
27 would not include elements that substantially interfere with groundwater recharge because the  
28 impervious surfaces proposed are limited to operation and maintenance buildings, various concrete  
29 pads for inverters and/or substation/switchyard components, and solar panel surfaces (which result  
30 in a dripline). The effect of these components is highly localized, and would slightly change the  
31 location where water infiltrates into the ground, but would not prevent groundwater recharge at  
32 times when enough rain falls for recharge to be initiated. The project site is not in an area that is  
33 naturally conducive to significant recharge, due to the fine-grained nature of soils (i.e., hydrologic  
34 group C and D), and because the little rain that does fall is primarily lost to evaporation or  
35 transpiration (Appendix B16).

36 With respect to groundwater quality, the only potential impact would be from pollutants that may  
37 be dissolved in water and seep into the underlying groundwater table. This is limited to fuels and/or  
38 solvents, because suspended solids, such as sediment, get filtered out by soils before reaching the  
39 underlying groundwater table. The measures discussed above to reduce sources of pollutants to  
40 surface water are equally effective at avoiding or substantially reducing the potential for such  
41 pollutants to reach the groundwater table. The depth to groundwater onsite exceeds 50 feet bgs,

1 therefore construction excavations for foundations and utilities would not intercept the groundwater  
2 table. The project would have no appreciable impact on groundwater quality.

3 Water supply for the project, to the extent it comes from groundwater, could have a minor, but less-  
4 than-significant effect on groundwater resources. Water would be trucked to the project site to  
5 provide a maximum of 200 AFY for the 2-year construction period, for a total of 400 AF for  
6 construction (Dudek, 2018). It is expected that the same source of water would be used for operation  
7 activities (that would require up to 30 AFY) and decommissioning activities (that would require  
8 200 AFY) principally for dust control and sanitation. The trucked water would be provided by the  
9 Mojave Public Utility District (PUD), which obtains its water supply from the Fremont Valley  
10 groundwater basin. The basin is not currently overdrafted, and the Mojave PUD has provided will-  
11 serve letters for a construction demand of up to 200 AFY and operation water demands. When  
12 decommissioning occurs, the project would obtain a will-serve letter from a water purveyor. To the  
13 extent available, tertiary treated water would be used on the project site for non-potable uses,  
14 thereby reducing potential competition with other water users for high-demand potable water  
15 supplies (see Section 3.10, *Infrastructure*, for more details on water supply). During construction  
16 and decommissioning, equipment laid down would not substantially reduce the amount of pervious  
17 surfaces onsite such that it would interfere with groundwater recharge.

18 As discussed previously in Section 3.16.1, *Affected Environment*, there are at least two groundwater  
19 wells on the project site and there may be additional wells that have yet to be identified. Should an  
20 abandoned water well be uncovered during construction, the Kern County Public Health  
21 Department (gen-tie) and the Air Force (solar facility) would be consulted regarding appropriate  
22 well destruction procedures and permitting, thereby avoiding impacts to groundwater during the  
23 process. Minimum standard statewide well destruction procedures, as outlined in DWR Bulletin  
24 74, require that well holes be filled with appropriate sealing materials so that surface pollutants or  
25 poor quality perched groundwater does not migrate into underlying groundwater aquifers.

26 Construction and decommissioning of the project would have no adverse impacts related to  
27 groundwater quality and/or infiltration.

### 28 Structures Within a Flood Zone

29 For the purpose of this analysis, structures located within a flood zone are only considered to have  
30 a substantial impact if their presence within the floodplain increases the probability, depth/extent,  
31 or severity of flood hazards for people, property, or the environment relative to pre-existing  
32 conditions. The project would not involve any large-scale changes in topography through grading  
33 or placement of fill, and would not substantially increase the pre-existing rate or volume of runoff  
34 given that impervious surfaces would consist of small and disconnected concrete pads and  
35 foundations. Access roads would be unpaved and consist of compacted surfaces of native soil  
36 and/or gravel. The cumulative size of impervious surfaces would be minor relative to the total size  
37 of the project site. It is not anticipated that access roads would cross any defined drainages.  
38 However, if avoidance is not feasible, in locations where access roads must cross defined drainage  
39 channels, the crossings would consist of low-water crossings and would not result in the redirection  
40 or impedance of flood flows; therefore, the project would not affect the beneficial uses identified  
41 in the Water Quality Control Plan for the ephemeral drainages on site. The gen-tie alignments

1 would have no impact on flooding because power poles, even where located within a FEMA flood  
2 hazard zone, are too small to substantially affect the extent, volume or rate of flood waters, and  
3 would not otherwise impact the health and safety of people or newly place offsite properties at  
4 addition risk of flooding.

5 A substantial portion of the proposed solar facility site is within a flood zone that likely  
6 continues onto the site from the adjacent (offsite) FEMA-mapped 100-year flood zones. Although  
7 the area of impact has not been mapped by FEMA, the Preliminary Flood Hazard Assessment  
8 (Appendix B16) shows that a majority of the project area would be within a 100-year flood zone,  
9 with approximately 35 percent of the site covered in greater than 6 inches of water (Appendix B16).  
10 The character of flooding is generally expected to be shallow and slow-moving, with the exception  
11 of the defined drainage channels near the northeastern boundary of the site (Appendix B16). The  
12 bulk of the project consisting of solar arrays would likely not have substantial impacts on the depth  
13 or extent of flooding because the steel pile foundations for the solar racking system would be spread  
14 out and small in diameter. The photovoltaic panels, at their lowest point, would likely be  
15 approximately 30 inches above the ground surface. In order to maintain a 1-foot freeboard above  
16 the 100-year flood elevations, the 100-year flood depth would need to be 28 inches or less. Based  
17 on the preliminary flood hazard assessment, this occurs within a zone that occupies a small narrow  
18 part of the eastern fifth of the project site. Impacts of the project on pre-existing flood hazards  
19 would be to the project site itself, and would thus represent an inspection and maintenance issue  
20 for the project developer rather than a significant health and safety risk for the public or offsite  
21 properties.

22 The primary concern with respect to flooding, therefore, is the potential for flooding to inundate  
23 substations, switchyards, and/or O&M areas, which could have the potential to release debris and/or  
24 hazardous materials to floodwaters and eventually downstream, as well as the potential  
25 for localized high-velocity floodwaters to scour steel pile foundations. The potential impact is  
26 therefore on water quality rather than public safety. It is therefore important to ensure the final  
27 design of the project considers both the depth and velocity of floodwaters, so sensitive areas such  
28 as material storage areas are not inundated and solar panel racking systems are not compromised.  
29 Because the assessment of onsite flood hazards is preliminary, mitigation consists of preparing a  
30 Final Flood Hazard Assessment in accordance with Mitigation Measure MM 3.16-2a for the solar  
31 facility portion of the project site and Mitigation Measure MM 3.16-2b for the gen-tie portion of  
32 the site, and preparing a Grading Plan that considers flood protection standards in accordance with  
33 Mitigation Measures MM 3.16-3a and MM 3.16-3b. The project facilities and associated  
34 construction staging areas would be sited and designed in accordance with this updated and  
35 accurate flood zone information. Potential impacts related to flood zones would be minimal.

36 With implementation of Mitigation Measures 3.16-2a, MM 3.16-2b, MM 3.16-3a, and MM 3.16-  
37 3b, the impact of project construction, operation and maintenance, and decommissioning with  
38 respect to flood hazards would be minor and less than significant.

1 **Operation and Maintenance**

2 **Surface Water Quality and Drainage Patterns**

3 Project operation would involve the use and storage of hazardous chemicals onsite that have the  
4 potential to contaminate surface runoff if poorly managed. These materials would include oils,  
5 lubricants, paints, solvents, degreasers and other cleaners, and transformer mineral oil. The  
6 developer would be required to develop a Hazardous Materials Business Plan per Mitigation  
7 Measure MM 3.9-1a for the solar facility portion of the project site and Mitigation Measure MM  
8 3.9-1b for the gen-tie portion of the site (see Section 3.9, *Hazardous Materials and Safety*, for more  
9 details), which would delineate hazardous material and hazardous waste storage areas and describe  
10 procedures for handling and disposing of hazardous materials used during operation.

11 Mitigation Measure MM 3.16-2a for the solar facility portion of the project site and Mitigation  
12 Measure MM 3.9-2b for the gen-tie portion of the site, would require the preparation of a Final  
13 Flood Hazard Assessment to confirm with greater certainty the existing flood hazards on site and  
14 a Final Hydrology Report that would include the final design of any necessary drainage mitigation  
15 features, such as retention basins, that would capture any substantial predicted increase in runoff.  
16 According to Appendix B20, the final stormwater retention volume is anticipated to be between  
17 30–50 acre-feet, based on County standards for analyzing pre- versus post-construction runoff  
18 conditions. These features would be designed in accordance with the County Hydrology Manual  
19 and Development Standards. As part of the SWPPP requirements (Mitigation Measures MM 3.16-  
20 1a and MM 3.16-1b), the project would be required to implement post-construction BMPs to  
21 stabilize any disturbed soils prior to the beginning of project operation. Minimization of disturbance  
22 to vegetation would be included as a BMP in the SWPPPs implemented during project construction  
23 and decommissioning, thereby maintaining topsoil stability and preventing siltation of runoff.  
24 Therefore, causation of and damage from flooding would be prevented, and the potential  
25 degradation of water quality from siltation would be reduced. Mitigation Measure MM 3.16-3a for  
26 the solar facility portion of the project site and MM 3.16-3b for the gen-tie portion of the project  
27 site, would require the preparation of a Grading Plan including nonstructural BMPs and drainage  
28 mitigation features (post-construction structural BMPs) aimed at detaining and filtering out  
29 pollutants onsite during project operation.

30 Operation could also result in water quality degradation through the encroachment of septic system  
31 waste into surface water should septic systems be improperly located, designed, or maintained. The  
32 developer would implement Mitigation Measure MM 3.7-2a for the solar facility portion of the  
33 project site, which would require compliance with the County septic system standards. This  
34 mitigation measure includes percolation testing demonstrating soil suitability for filtering effluent  
35 and submittal of septic plans to the County prior to construction of the septic systems. No adverse  
36 impacts to water quality are expected.

37 During operation, the presence of the project structures, including impervious surfaces that would  
38 result from construction of maintenance buildings, various concrete pads for inverters and/or  
39 substation/switchyard components, and solar panel surfaces (which result in a dripline), would have  
40 minor and localized effects on the site's existing drainage pattern, which could lead to erosion,  
41 siltation or flooding onsite or offsite. Up to 4,000 acres of the project site would be developed.  
42 Development would mainly consist of individual panels mounted on poles and a generation tie line.

1 Thus, with the exception of the service buildings and warehouses, the majority of the project site  
2 would continue to allow stormwater percolation. Further, the project site is relatively flat, indicating  
3 a low existing erosion potential and low flood velocity. Mitigation Measures MM 3.16-2a and MM  
4 3.16-2b would further refine mapping of flood zones onsite so project facilities can be designed to  
5 avoid flood zones to the maximum extent possible, in compliance with the requirements of the Kern  
6 County Floodplain Management Ordinance. Therefore, the project would avoid impacts related to  
7 existing flood zones and drainages. Additionally, the developer would prepare a grading plan that  
8 would detail the implementation of drainage devices and erosion control features designed to  
9 minimize excess runoff and reduce erosion and sedimentation (Mitigation Measures MM 3.16-3a  
10 and MM 3.16-3b). Furthermore, the site engineering and design plans for the proposed project  
11 would be required to comply with the Hydrology Manual and Development Standards, which  
12 would help reduce flood flows onsite. With implementation of mitigation measures, operation of  
13 the project would comply with all General Plan and Specific Plan requirements pertaining to  
14 surface water quality and drainage patterns. No adverse effects related to erosion, siltation, or  
15 flooding are expected.

#### 16 Groundwater Quality and Infiltration

17 For the same reasons discussed above under “construction and decommissioning,” the project  
18 would not have a significant impact with respect to groundwater quality and infiltration. Should  
19 operation and maintenance of the project rely on onsite groundwater, it would be from the FVGB,  
20 which is designated by DWR as a low-priority basin, based on low population density, negative  
21 growth projections, low numbers of private and public supply wells, and the lack of irrigated  
22 agriculture. The use of up to 30 AFY for operation is a conservative estimate, and given the lack  
23 of nearby groundwater users, would not substantially affect the rate of production of pre-existing  
24 wells. The anticipated O&M demand of 30 AFY translates to an average well production of  
25 18.5 gallons per minute, whereas typical production wells in the region can pump in the hundreds  
26 of gallons per minute. Onsite groundwater would only be required on a periodic basis during panel  
27 washing and/or to fill storage tanks serving the O&M area, and therefore any cone of depression  
28 that develops from using an onsite well would be highly localized and minor in magnitude and  
29 would recover shortly after pumping ceases. Given the groundwater table in the area ranges  
30 between 50 and 66 feet bgs, and that typical depths of wells generally exceed 200 feet, a temporary  
31 groundwater elevation change, likely on the order of a few feet, would not be a significant impact  
32 to the FVGB, which has a groundwater in storage volume in the millions of acre-feet.

#### 33 Structures Within a Flood Zone

34 Although the project site is in an area of an undetermined flood zone (Zone D), mapped 100-year  
35 flood zones (Zone A) adjacent to the project site and a preliminary flood hazard assessment  
36 (Appendix B16) indicates that the majority of the project site is likely within a 100-year flood zone.  
37 For the reasons discussed above under “construction and decommissioning,” with implementation  
38 of Mitigation Measures MM 3.16-2a, MM 3.16-2b, MM 3.16-3a, and 3.16-3b, the impact of project  
39 construction, operation and maintenance, and decommissioning with respect to flood hazards  
40 would be minor and less than significant.

1 **CEQA: Impact Significance Determination**

2 **Impact 3.16-1: The project could violate water quality standards or waste discharge**  
3 **requirements.**

4 Construction activities including grading and excavation, and decommissioning activities such as  
5 demolition and backfilling would disturb and expose soils, which could result in erosion and  
6 sedimentation of stormwater. Further, construction or decommissioning activities could result in  
7 the accidental release of chemicals and/or hazardous materials that could mix with stormwater and  
8 result in water quality degradation. Materials that may be used onsite and could degrade water  
9 quality include diesel fuel, gasoline, lubricant oils and grease, hydraulic fluid, antifreeze,  
10 transmission fluid, cement slurry, and other fluids used by construction and maintenance vehicles  
11 and equipment.

12 The project site is relatively flat in its existing condition. The developer plans to implement the  
13 “mow and roll” technique of site preparation, which allows for a significant reduction in the extent  
14 of rough grading. Instead of conducting vegetation clearing and mass grading across the whole site,  
15 only the limited grading necessary to establish construction staging areas; site access roads; inverter  
16 pads; utility trenches; and building pads for on-base substation, switchyards and the O&M building;  
17 and discreet areas where leveling may be needed for pile installation would be conducted. In order  
18 to access locations for vibratory piles placed for solar racking, vegetation would be mowed, leaving  
19 root wads intact and aboveground vegetation rolled over only to the extent necessary for  
20 construction equipment to access the construction site. Therefore, it has a modest potential for  
21 runoff, reducing its ability to transport pollutants generated onsite to other water bodies. Drainage  
22 mitigation, as determined in the hydrology and water quality assessment (Appendix B20) would be  
23 installed to capture the predicted increase in runoff resulting from the proposed project and reduce  
24 erosion and consequential siltation and degradation of water quality. It is anticipated that a retention  
25 basin with a volume of between 30 and 50 acre-feet would be required, which is based on County  
26 standards for analyzing pre- vs. post-construction runoff.

27 During construction and decommissioning, the developer would be required to adhere to the  
28 requirements of the Kern County Grading Ordinance that would reduce erosion through slope  
29 control and the implementation of temporary erosion control devices where necessary. Although  
30 compliance with the Construction General Permit is not technically required since the project site  
31 would not drain to waters of the U.S., the Kern County Engineering, Surveying, and Permit  
32 Services Department requires implementation of a SWPPP that would include erosion control,  
33 sediment control, non-stormwater and post-construction BMPs to be implemented to prevent  
34 pollutants (sediment, oil, etc.) from contaminating nearby drainages (Mitigation Measures MM  
35 3.16-1a and MM 3.16-1b). The developer would also implement measures to minimize erosion  
36 control and sedimentation during construction in accordance with the Kern County Grading  
37 Ordinance.

38 Similar to project construction, chemicals used onsite during operation for facility maintenance  
39 including oils, lubricants, paints, solvents, degreasers and other cleaners, and transformer mineral  
40 oil, could mix with stormwater and degrade water quality. As described in Section 3.9, *Hazards*  
41 *and Materials and Safety*, Mitigation Measure MM 3.9-1a for the solar facility portion of the project

1 and Mitigation Measure MM 3.9-1b for the gen-tie portion of the project, would require the  
2 developer to develop a Hazardous Materials Business Plan that would delineate hazardous material  
3 and hazardous waste storage areas; describe proper handling, storage, transport, and disposal  
4 techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill;  
5 describe procedures for handling and disposing of unanticipated hazardous materials encountered  
6 during operation, and establish public and agency notification procedures for spills and other  
7 emergencies, including fires. The developer would provide the Hazardous Materials Business Plan  
8 to all contractors working on the project and would ensure that one copy is available at the project  
9 site at all times.

10 Project facilities would be designed to avoid the placement of project infrastructure and materials  
11 in the path of flood flows where possible, thereby reducing the potential for stormwater to come  
12 into contact with pollutants. The developer would be required to prepare a Final Flood Hazard  
13 Assessment to determine potential flood hazards onsite and mitigate these hazards as described in  
14 Mitigation Measure MM 3.16-3a for the solar facility portion of the project and Mitigation Measure  
15 MM 3.16-3b for the gen-tie portion of the project. The avoidance of flood flows would reduce the  
16 potential introduction of pollutants associated with project operation (as identified above) into  
17 stormwater. Per Mitigation Measure MM 3.16-4a for the solar facility portion of the project site  
18 and Mitigation Measure MM 3.16-4b for the gen-tie portion of the site, the developer would be  
19 required to prepare and submit a Grading Plan to the Kern County Engineering, Surveying, and  
20 Permit Services Department, which would include drainage devices and erosion control measures  
21 intended to minimize runoff and prevent erosion and sedimentation, thereby preventing water  
22 quality impacts.

23 Based on the discussion above, construction and operation of the project are not expected to violate  
24 the Water Quality Control Plan water quality objectives and standards that apply to the ephemeral  
25 washes onsite such that beneficial uses of the washes are affected. Therefore, impacts to water  
26 quality would be less than significant with incorporation of mitigation.

### 27 **Mitigation Measures**

28 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.16-1a through MM 3.16-4a, and  
29 MM 3.16-1b through MM 3.16-4b (see Sections 3.9.5 and 3.16.5 for mitigation measures).

### 30 **Level of Significance**

31 Impacts would be less than significant.

### 32 **Impact 3.16-2: The project could substantially deplete groundwater supplies or interfere** 33 **substantially with groundwater recharge such that there would be a net deficit in aquifer** 34 **volume or a lowering of the local groundwater table level.**

35 A maximum of approximately 200 AFY of water per year would be required during the 2-year  
36 construction period for concrete manufacturing, dust control, and sanitation uses. During operation,  
37 the proposed project would require approximately 30 AFY of water for panel washing, dust  
38 mitigation, landscaping, and sanitation purposes. Water would be trucked in to the site for  
39 construction, operation, and decommissioning. During operation, water would be trucked in from  
40 the Mojave Public Utilities District, which obtains water from the Fremont Valley Groundwater

1 Basin, or an onsite well within the Fremont Valley Groundwater Basin would be dug. The Mojave  
2 PUD has ensured sufficient water is available to provide the proposed project's water supply during  
3 construction and operation via will-serve letters.

4 In Accordance with SB610, a water supply assessment (WSA) has been completed to demonstrate  
5 the sufficiency of water supply necessary to support the project over a 20-year time horizon  
6 (Appendix B19). The analysis found that the Mojave PUD has sufficient access to water supply  
7 through its connection to AVEK, and/or its non-potable Well 30 to supply the project even in  
8 single-dry and multiple-dry year scenarios (Appendix B19). AVEK has the third-largest allotment  
9 of the 29 State Water Project contractors, after the Metropolitan Water District of Southern  
10 California and the Kern County Water Agency, and also has groundwater banking reserves to  
11 supplement imported water deliveries. In addition, Mojave PUD's Well 30 provides up to 350 gpm  
12 of non-potable water and is located 4.5 miles north of the proposed project's northern border.  
13 Groundwater supplies in the FVGB are adequate to supply the project over a 20-year period. The  
14 FVGB is not currently in overdraft and recharge estimates of 2.5 percent of average rainfall into  
15 the upper aquifer are sufficient to meet groundwater demand. Extraction of groundwater from the  
16 FVGB is currently 4,095 AFY, with Mojave PUD extracting 467 AFY, below the high pumping  
17 volume of 32,000 acre-feet in the 1960s and 1970s. Therefore, the project would not substantially  
18 deplete groundwater supplies.

19 Although the project would require some excavation and installation of structures below ground  
20 surface, none of these subsurface structures would be expected to come into contact with or affect  
21 existing groundwater levels. With the installation of compacted roads, concrete pads and warehouse  
22 buildings, the project would increase the amount of impervious surfaces onsite during its operation;  
23 however, the vast amount of undeveloped land surrounding the project site would provide sufficient  
24 pervious surfaces for continued groundwater recharge in the area and rates of groundwater recharge  
25 are not expected to be altered. Historical drainage patterns would be maintained during project  
26 operation to the maximum extent feasible through the avoidance of existing flood zones. The  
27 project would be designed to avoid impacts to flood zones to the maximum extent possible, which  
28 would allow the passage of surface water through the project site at a natural flow rate (Appendix  
29 B20). The majority of the project site would have embedded solar panel foundation poles that  
30 would have a negligible effect on existing drainage and infiltration. Therefore, the project would  
31 not substantially interfere with groundwater recharge .

32 The proposed project would be required to comply with the GWMP prepared for the FVGB, which  
33 has the capacity to be revised into a GSP per SGMA requirements in the future if necessary. The  
34 proposed project would not be a part of potential agricultural growth that could contribute to FVGB  
35 overdraft beginning in 2030. Further, the project would comply with the GWMP management  
36 strategy of preventing the discharge of pollutants into the environment. As identified in impact (a)  
37 above, the proposed project would implement a SWPPP during project construction to reduce  
38 potential mixing of stormwater with pollutants onsite as well as a Hazardous Materials Business  
39 Plan during both construction and operation (per Measure MM 3.9-1a and Mitigation Measure MM  
40 3.9-1b) that would reduce the potential uncontrolled release of hazardous materials into the  
41 environment. Per Mitigation Measure MM 3.16-3a and 3.16-3b, the project would be designed to  
42 avoid flood flows, thereby reducing the potential for pollutants such as maintenance vehicle fuel to

1 come into contact with stormwater during operation. Further, the project would comply with the  
2 GWMP management strategy of protecting areas suitable for groundwater recharge, as the project  
3 would have a negligible effect on groundwater recharge within the vicinity of the project site.  
4 Therefore, the project would not impede sustainable management of the groundwater basin.

5 For the same reasons discussed in the NEPA analysis, construction and decommissioning of the  
6 project would have a less-than-significant impact related to depleting groundwater supplies or  
7 interfering substantially with groundwater recharge .

#### 8 **Mitigation Measures**

9 None Required.

#### 10 **Level of Significance**

11 Impacts would be less than significant.

12 **Impact 3.16-3: The project could substantially alter the existing drainage pattern of the site**  
13 **or area, including through the alteration of the course of a stream or river, in a manner that**  
14 **would result in substantial erosion or siltation and/or flooding onsite or off site.**

15 The project site contains ephemeral streams that carry surface runoff flows. Although the project  
16 site is relatively flat, grading and excavation during construction and decommissioning would have  
17 a minor and temporary effect on the ground surface topography and drainage patterns, potentially  
18 concentrating and/or increasing runoff flows and that could result in erosion, sedimentation and/or  
19 flooding. Introduction of impervious surfaces onsite would be small in any one area and  
20 disconnected across the project site, but could also increase runoff onsite that could erode sediment  
21 and cause sedimentation or flooding.

22 The proposed project would implement a SWPPP during construction and decommissioning that  
23 includes erosion and sediment control BMPs designed to prevent erosion or siltation onsite  
24 (Mitigation Measures MM 3.16-1a and MM 3.16-1b). Further, the proposed facilities and  
25 associated construction and demolition activities would avoid flood paths to the maximum extent  
26 possible. Flood paths would be further refined through preparation of a final flood hazard  
27 assessment (Mitigation Measures MM 3.16-2a and MM 3.16-2b) and grading plan (Mitigation  
28 Measures MM 3.16-4a and MM 3.16-4b) prepared in accordance with the County Grading Code.  
29 Although solar panel foundations and generation tie lines would cover limited ground surface areas,  
30 the grading plan would include any drainage devices deemed necessary to accommodate  
31 anticipated increases in runoff caused by an increase in impervious surfaces onsite. The proposed  
32 project would comply with the County Hydrology Manual and Development Standards. Therefore,  
33 the proposed project would not result in the alteration of drainage patterns onsite so as to result in  
34 erosion or siltation and/or flooding onsite or offsite.

#### 35 **Mitigation Measures**

36 Implement Mitigation Measures MM 3.16-1a through MM 3.16-4a and Mitigation Measures MM  
37 3.16-1b through MM 3.16-4b (see Section 3.16.5 for mitigation measures).

1 **Level of Significance**

2 Impacts would be less than significant.

3 **Impact 3.16-4: The project could create or contribute runoff water that would exceed the**  
4 **capacity of existing or planned stormwater drainage systems or provide substantial**  
5 **additional sources of polluted runoff.**

6 There is no engineered stormwater drainage system whose capacity could be exceeded by project  
7 construction, operation, and/or decommissioning. The project drains to desert washes which have  
8 no capacity limitations (i.e., pipes, culverts, and/or bridges). Following implementation, much of  
9 the project site would remain pervious, allowing infiltration of the majority of runoff from storm  
10 events into the soil. According to the hydrologic analyses in the conceptual drainage report, the  
11 project would not substantially affect existing flow patterns onsite. The project would include all  
12 necessary stormwater management facilities, as confirmed by the final drainage report required by  
13 Mitigation Measures MM 3.16-4a and MM 3.16-5a for the solar facility portion of the project as  
14 well as Mitigation Measures MM 3.16-4b and MM 3.16-5b for the gen-tie portion of the site. As  
15 discussed above, the project would be required to implement a SWPPP to control erosion and  
16 protect water quality of stormwater runoff as part of Mitigation Measure MM 3.16-1a for the solar  
17 facility portion of the project and Mitigation Measure MM 3.16-1b for the gen-tie portion of the  
18 project. Mitigation Measures MM 3.16-4a and MM 3.16-4b would help prevent erosion and  
19 sedimentation from occurring onsite and polluting receiving waters. Therefore, no stormwater  
20 drainage system capacities would be exceeded by the proposed project, and the project would not  
21 contribute to additional polluted runoff.

22 **Mitigation Measures**

23 Implement Mitigation Measures MM 3.16-1a, MM 3.16-1b, MM 3.16-4a, MM 3.16-4b, MM 3.16-  
24 5a, and MM 3.16-5b (see Section 3.16.5 for mitigation measures).

25 **Level of Significance**

26 Impacts would be less than significant.

27 **Impact 3.16-5: The project could otherwise substantially degrade water quality.**

28 As stated under Impact 3.16-1, compliance with Mitigation Measure MM 3.16-1a for the solar  
29 facility portion of the project and Mitigation Measure MM 3.16-1b for the gen-tie portion of the  
30 project, requires BMPs to be implemented to protect water quality during construction and  
31 decommissioning of all facilities. A Hazardous Materials Business Plan would also be implemented  
32 for both the solar facility portion of the project and the gen-tie portion of the project, that specifies  
33 appropriate handling and accidental spill cleanup procedures for hazardous materials (Mitigation  
34 Measures MM 3.9-1a and MM 3.9-1b). Preparation of a Final Flood Hazard Assessment  
35 (Mitigation Measures MM 3.16-2a and MM 3.16-2b) and a Grading Plan (Mitigation Measures  
36 MM 3.16-3a and MM 3.16-3b) to Kern County and the Air Force would avoid an increase in  
37 flooding that could cause erosion and/or sedimentation.

38 The project site would use septic systems to treat waste produced onsite during operation. Septic  
39 systems have the potential to overflow as a result of irregular maintenance or improper installation.

1 This could result in presence of untreated waste from the septic tank on or near the ground surface;  
2 should runoff mix with this untreated waste, water quality degradation could result. However, the  
3 septic systems would comply with County septic system requirements in accordance with  
4 Mitigation Measure MM 3.7-2a for the solar facility portion of the site, which include lot sizing  
5 and setbacks from any existing wells, groundwater and surface water onsite to avoid water quality  
6 degradation. The developer would also be required to submit a copy of soil reports including  
7 percolation testing that demonstrate the feasibility of septic system installation on the project site,  
8 septic plans, and a statement from the engineer saying all plans would comply with septic  
9 regulations to the Kern County Environmental Health Services Department for review prior to  
10 issuance of a building permit. Therefore, impacts with regard to the further degradation of water  
11 quality would be less than significant.

#### 12 **Mitigation Measures**

13 Implement Mitigation Measures MM 3.16-1a through MM 3.16-4a, MM 3.16-1b through MM  
14 3.16-4b, and MM 3.7-2a (see Sections 3.7.5 and 3.16.5 for mitigation measures).

#### 15 **Level of Significance After Mitigation**

16 Impacts would be less than significant.

#### 17 **Impact 3.16-6: The project could place within a 100-year flood hazard area structures that** 18 **would impede or redirect flood flows.**

19 The proposed solar facility is located in an area with currently undetermined flood hazards  
20 according to FEMA. Some immediately adjacent areas are located within a 100-year flood zone  
21 (Flood Zone A). As discussed under the NEPA analysis, with implementation of Mitigation  
22 Measures MM 3.16-2a and MM 3.16-3a for the solar facility portion of the project and Mitigation  
23 Measures MM 3.16-2b and MM 3.16-3b for the gen-tie portion of the project, the impact of project  
24 construction, operation and maintenance, and decommissioning with respect to flood hazards would  
25 be minor and less than significant. Preparation of a final flood hazard assessment as required by  
26 Mitigation Measure MM 3.16-3a for the solar facility portion of the project and Mitigation Measure  
27 MM 3.9-3b for the gen-tie portion of the project, would ensure that flood hazards on the site are  
28 assessed in accordance with the County Floodplain Management Ordinance, and that structures are  
29 designed so that damage is avoided in a 100-year flood. Preparation of a grading plan as required by  
30 Mitigation Measure MM 3.16-4a for the solar facility portion of the project and Mitigation Measure  
31 MM 3.16-4b for the gen-tie portion of the project would incorporate drainage features where  
32 necessary to avoid impacts from flood flows. Based on these findings, proposed facilities would be  
33 designed to allow for drainage to pass through the site. Therefore, the construction and operation of  
34 the proposed facilities would have a less-than-significant impact related to impeding or redirecting  
35 flood flows.

#### 36 **Mitigation Measures**

37 Implement Mitigation Measures MM 3.16-2a, MM 3.16-2b, MM 3.16-3a, MM 3.16-3b, MM 3.16-  
38 4a, and MM 3.16-4b (see Section 3.16.5 for mitigation measures).

#### 39 **Level of Significance**

40 Impacts would be less than significant.

### 3.16.3.2 Alternative B: Up to 1,500-Acre EUL

#### ***NEPA: Environmental Impacts***

##### **Construction and Decommissioning**

The Alternative B solar facility would be located within the same footprint as the Alternative A project site and would use the same gen-tie route options proposed for Alternative A. However, the developer would have increased flexibility to site solar arrays within the identified project site and a greater ability to avoid sensitive environmental resources and avoid terrain that is not optimal for solar development. Alternative B would result in similar construction impacts to hydrology and water quality as described in Alternative A. Similar to Alternative A, water quality degradation from erosion, sedimentation, and release of hazardous chemicals during construction activities could result under this alternative; a SWPPP would be required to mitigate these impacts. However, because fewer acres of ground surface would be disturbed during construction of Alternative B, impacts related to erosion and/or flooding would be reduced. The construction period would also be shorter for Alternative B, which would result in a lower water demand. Impacts associated with the construction of Alternative B would be similar but of a lower magnitude than Alternative A. All mitigation measures identified for Alternative A would also be required for Alternative B.

Alternative B would undergo the same decommissioning process as Alternative A. However, because of the reduced size of this alternative, the geographic area undergoing disassembly of solar facilities would be less than that of Alternative A. This smaller size would limit the area within which impacts to hydrology and water quality could result. Consequently, impacts associated with the decommissioning of Alternative B would be reduced relative to Alternative A.

##### **Operation and Maintenance**

Alternative B would result in similar operational impacts to hydrology and water quality as described in Alternative A. Similar to Alternative A, Alternative B would require the use of septic systems, however, because of the reduced size of this alternative, the amount of pervious ground surface lost and the potential to disrupt existing drainage patterns would be less for Alternative B than for Alternative A, and operational water demand would likely be less due to the lower amount of panels. This smaller size would limit the area within which impacts to the public, workers, and the environment could result. Consequently, impacts associated with operation and maintenance of Alternative B would be reduced relative to Alternative A. All mitigation measures identified for Alternative A would be required for Alternative B.

#### ***CEQA: Impact Significance Determination***

The significance conclusions for impacts to hydrology and water quality under Alternative A would be less than significant with mitigation incorporated. The types of facilities installed and the general location would be the same for both Alternative A and Alternative B. Since Alternative B would result in less physical development than Alternative A; it is likely that this alternative would result in reduced impacts to hydrology and water quality. Therefore, impacts related to hydrology and water quality under Alternative B would also be less than significant with implementation of the same mitigation measures.

1 **Mitigation Measures**

2 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.16-1a through MM 3.16-4a, and  
3 MM 3.16-1b through 3.16-4b (see Sections 3.9.5 and 3.16.5 for mitigation measures).

4 **3.16.3.3 Alternative C: No Action/No Project**

5 ***NEPA: Environmental Impacts***

6 **Construction, Operation, and Decommissioning**

7 Under this alternative, none of the components proposed under Alternative A would be built. If  
8 Alternative C were implemented, there would be no changes to onsite conditions or the existing  
9 environmental setting as described previously. There would be no construction, grading, or  
10 employees on the site; therefore, there would be no potential for significant impacts to hydrology  
11 and water quality to occur. Thus, Alternative C would not result in significant impacts to hydrology  
12 and water quality.

13 ***CEQA: Impact Significance Determination***

14 Alternative C would not result in significant impacts concerning hydrology and water quality.

15 **Mitigation Measures**

16 No mitigation measures are required.

17 **Level of Significance after Mitigation**

18 Impacts would be less than significant.

19 **3.16.4 Cumulative Impact Analysis**

20 **3.16.4.1 NEPA: Cumulative Environmental Effects and Their**  
21 **Significance**

22 **Surface Water Quality and Drainage Pattern**

23 The temporal scope of hydrology and water quality impacts would occur throughout the life of the  
24 project. Typically, the geographic scope for cumulative effects relating to hydrology and water  
25 quality would be the watershed boundary and groundwater basin. It is estimated that the water  
26 onsite likely evaporates or infiltrates prior to establishing a hydrological connection to the adjacent  
27 Rogers Dry Lake. No onsite water bodies have any water quality impairments. Additionally, there  
28 is no established hydrological connection between onsite water bodies and other surface water  
29 bodies. Therefore, cumulative impacts related to water quality, erosion and sedimentation would  
30 be site-specific. Construction, operation and maintenance, and decommissioning of the project  
31 could result in impacts to water quality through the improper containment of pollutants; however,  
32 with implementation of Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.16-1a through MM  
33 3.16-4a, and MM 3.16-1b through MM 3.16-4b, the potential risks of water quality degradation  
34 would be reduced.

35 **Groundwater Quality and Infiltration**

36 The geographic area for groundwater impacts typically includes the collective groundwater basin.  
37 Water for project construction, operation, and decommissioning uses would be trucked in. Some

1 of the cumulative projects could rely on onsite wells for a portion or all of their water supply or  
2 could have water trucked in to the site. The Fremont Valley groundwater basin is not in an identified  
3 state of critical overdraft. Projects that would acquire water from offsite, would be required to do  
4 so from a water purveyor with sufficient water available to provide its customers. Cumulative  
5 projects could result in impacts to groundwater recharge during operation through the introduction  
6 of impervious surfaces to the area and consequential reduction of infiltration area. However, 54 of  
7 the 90 cumulative projects considered in the cumulative analysis would be solar projects, which by  
8 nature would consist of mostly lifted solar panels and would maintain the majority of pervious  
9 surfaces onsite. Further, the projects would be mostly spread out throughout the area, maintaining  
10 pervious surfaces between impervious surfaces. Should an abandoned water well be uncovered  
11 during construction, the Kern County Public Health Department would be consulted regarding  
12 appropriate well destruction procedures and permitting, thereby avoiding impacts to groundwater  
13 during the process. No adverse impacts related to groundwater quality and infiltration are expected  
14 to occur.

#### 15 Structures Within a Flood Zone

16 The only effect of the project on flooding and flood zones relate to the potential for pre-existing  
17 flood hazards to damage or inundate project facilities, thereby introducing potential water quality  
18 impacts to receiving waters. The effect of the project on pre-existing flood extents and depths would  
19 be negligible or non-existent. In accordance with Mitigation Measures MM 3.16-2a and MM 3.16-  
20 3a for the solar facility portion of the project and Mitigation Measures MM 3.16-2b and MM 3.16-  
21 3b for the gen-tie portion of the project, a Final Flood Hazard Assessment using this updated flood  
22 zone data would be prepared that disclose flood hazards and design the project. The report would  
23 also include the final design for the drainage mitigation features that would be designed to capture  
24 the predicted increase in site runoff resulting from the project. In addition, the cumulative projects  
25 would be required to adhere to Kern County Development Standards, which establish guidelines  
26 that include onsite drainage flow requirements. Adverse cumulative impacts related to flooding are  
27 not expected.

#### 28 **3.14.4.2 CEQA: Cumulative Impact Significance Determination**

29 As previously described, development of the project, with implementation of the regulatory  
30 requirements discussed in this section, would not result in adverse cumulative impacts related to  
31 hydrology and water quality, largely because the majority of the surface flows passing through the  
32 project site are ephemeral and do not have a downstream connection with other water bodies.  
33 Cumulative impacts related to water quality degradation, erosion, siltation, flooding, and  
34 groundwater would be less than significant with implementation of Mitigation Measures MM 3.9-  
35 1a, MM 3.9-1b, MM 3.16-1a through MM 3.16-4a, and MM 3.16-1b through MM 3.16-4b.

36 As described in Chapter 3, *Environmental Analysis*, multiple projects, including several utility-  
37 scale solar and wind energy production facilities, are proposed throughout Kern County, the city  
38 of Palmdale, the city of Lancaster, and unincorporated Los Angeles County. Many are located, like  
39 the project site, in the Mojave Desert and Antelope Valley. The geographic scope for the hydrology  
40 and water quality cumulative analysis is the Antelope Valley Watershed and the Fremont Valley  
41 Groundwater Basin.

1 As shown in Table 3-1, multiple utility-scale renewable energy projects are proposed for the  
2 Antelope Valley Watershed and range in status from their application stage to their preconstruction  
3 stage. Fifty-four solar energy projects are proposed or approved within the vicinity of the project  
4 site within Kern County. With many of these projects expected to undergo construction in the next  
5 few years, the Eastern Antelope Valley will experience increasing demands on water resources,  
6 associated in particular with the construction phase of these projects. The water-intensive use  
7 period for the Proposed Action is limited to the construction phase (requiring up to 200 AFY and  
8 30 AFY maximum for operation); therefore, the temporal scope of analysis is limited to the  
9 approximately 2-year period beginning when the Proposed Action would be under construction.

10 Project construction would require approximately 200 AFY over a 2-year period. Operational water  
11 demand would be approximately 30 AFY (totaling approximately 2,300 acre-feet over 50 years).  
12 The project would require approximately 200 AFY during decommissioning. Project water supply,  
13 including potable water for drinking purposes for the operations and maintenance facility personnel  
14 and for operations would be trucked in from the Mojave PUD, which obtains its water from the  
15 Fremont Valley groundwater basin and a connection with the AVEK. The Fremont Valley  
16 groundwater basin is not in a condition of critical overdraft, and the Mojave PUD has indicated  
17 sufficient supplies are available for the project's construction and operation. Prior to  
18 decommissioning, the project would be required to obtain a will-serve letter from a water purveyor.  
19 As concluded in the project WSA (Appendix B19), the project's water demand would not  
20 substantially affect groundwater levels or groundwater recharge (see Section 3.10, *Infrastructure*,  
21 for more details on cumulative water supply). Since the site is currently composed of open space,  
22 the operational water use for the project would represent an increase in existing water demand.  
23 Other recent, present, and proposed solar projects of a similar scope included on Table 3-1 would  
24 likely have comparable water supply needs for construction and operation. Unlike the Proposed  
25 Action, many of the other solar energy projects in the Antelope Valley Watershed would replace  
26 agricultural uses and would greatly reduce existing operational water demand. If all solar projects  
27 would depend on local groundwater sources, short-term construction-related demands on  
28 groundwater would be high when considering all projects in the cumulative scenario; however, as  
29 the solar projects are at various phases of progress (from application approval to preconstruction),  
30 it is unlikely that construction of all or many of the proposed solar projects would overlap. Further,  
31 the solar projects could obtain water from various water sources, including other groundwater  
32 basins or surface water supplies. Therefore, the proposed project would not represent a  
33 cumulatively considerable contribution to water resource impacts on the basin. Cumulative impacts  
34 related to water supplies would be less than significant.

35 The cumulative setting for soil erosion consists of recent, present, and proposed land use conditions  
36 in the Antelope Valley Watershed, because such a scope allows for analysis of water quality  
37 impacts on the rest of the watershed. Project construction activities would consist of grading and  
38 vegetation removal activities that could result in erosion and sedimentation that decreases water  
39 quality. In addition, construction and decommissioning could result in spills chemicals that could  
40 also affect water quality. However, the project would develop a SWPPP including site-specific  
41 erosion control, sediment control, waste management non-stormwater management and post-  
42 construction BMPs in order to comply with Construction General Permit requirements (see  
43 Mitigation Measures MM 3.16-1a and MM 3.16-1b). Operation could also result in the degradation

1 of water quality from fuel leaks and other chemicals associated with maintenance activities. The  
2 developer would be required to develop a Hazardous Materials Business Plan that would describe  
3 proper handling of hazardous materials and spill response procedures should an accidental spill  
4 occur (see Mitigation Measures MM 3.9-1a and MM 3.9-1b). The proposed septic systems  
5 associated with the Proposed Action could also impact water quality if not properly installed or  
6 maintained. However, the developer would be required to perform percolation testing, submit septic  
7 system plans to the County and regularly maintain systems (see Mitigation Measure MM 3.7-2a)  
8 to ensure appropriate installation and operation of septic systems. The septic systems would also  
9 be required to be located a certain distance away from various water quality features to avoid water  
10 quality effects. In addition to these requirements, the Proposed Action would be required to comply  
11 with applicable codes, standards, and permitting requirements to mitigate erosion and water quality  
12 impacts.

13 The other 54 proposed solar projects would be expected to include similar construction, operation,  
14 and decommissioning activities; would be subject to the same codes, standards, and permitting  
15 requirements; and would be required to develop SWPPP and Hazardous Materials Business Plans  
16 if they meet applicable requirements. They would also be subject to compliance with septic system  
17 testing, plan, maintenance, and setback requirements. In addition, dust control measures are  
18 included as part of Mitigation Measures MM 3.3-1a for the solar facility portion of the project and  
19 Mitigation Measure MM 3.3-1b for the gen-tie portion of the project, in Section 3.3, *Air Quality*,  
20 to reduce airborne pollutants. Impacts associated with erosion are mitigated on a project-by-project  
21 basis, which would reduce the overall cumulative impact to a less-than-significant level.

22 The Proposed Action could result in flooding as a result of an increase of impervious materials  
23 onsite. The project would not alter the course of any existing creek or stream in the vicinity of the  
24 project. As discussed, the developer would design the proposed facilities to maintain existing  
25 drainage patterns when feasible and to capture the estimated increase in runoff with drainage  
26 mitigation features if necessary. The developer would be required to prepare a Final Flood Hazard  
27 Assessment in compliance with the County Floodplain Management Ordinance determining the  
28 extent of flood hazards throughout the project site (Mitigation Measures MM 3.16-2a, MM 3.16-  
29 3a, MM 3.16-2b, and MM 3.16-3b), as well as a Grading Plan in compliance with the County  
30 Grading Code that would include any necessary drainage devices to minimize runoff (Mitigation  
31 Measures MM 3.16-4a and MM 3.16-4b). All other projects in Table 3-1 would be subject to the  
32 same federal, state, and local regulations regarding flooding. The project would not have a  
33 cumulatively considerable contribution to impacts on hydrology and water quality.

#### 34 **Mitigation Measures**

35 Implement Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.16-1a through MM 3.16-4a, MM  
36 3.16-1b through MM 3.16-4b, and MM 3.7-2a (see Sections 3.9.5 and 3.16.5 for mitigation  
37 measures).

#### 38 **Level of Significance after Mitigation**

39 Cumulative impacts would be less than significant.

## 3.16.5 Mitigation Measures

Implement Mitigation Measures MM 3.7-2a, MM 3.9-1a and MM 3.9-1b: Hazardous Materials Business Plan (see Sections 3.7, *Geology and Soils*, and 3.9, *Hazardous Materials and Safety*, for the full mitigation measures).

### 3.16.5.1 Solar Facility Mitigation Measures

**MM 3.16-1a: Stormwater Pollution Prevention Plan.** Prior to issuance of a grading permit for construction or decommissioning, the developer shall submit a Stormwater Pollution Prevention Plan to the Kern County Engineering, Surveying, and Permit Services Department that specifies best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment and other pollutants from moving offsite and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan shall be incorporated into design specifications and construction contracts. Best management practices categories employed onsite would include erosion control, sediment control, good housekeeping, and post-construction. Best management practices for the construction phase shall include, but not be limited to, those listed below.

#### 1. Erosion Control

- a. Use of existing roadways to the maximum extent possible
- b. Limiting grading to the minimum area necessary for construction, operation and decommissioning of the project
- c. Encourage maintenance of existing topography and limit vegetation disturbance/removal such as through mowing to the maximum extent possible

#### 2. Sediment Control

- a. Implementing fiber rolls and sand bags around drainage areas and the site perimeter
- b. Stockpiling and disposing of demolition debris, concrete, and soil properly
- c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas

#### 3. Good Housekeeping

- a. Implement proper protections for fueling and maintenance of equipment and vehicles
- b. Manage waste and aggressively control litter

#### 4. Post Construction

- a. Stabilize soil in disturbed areas either by revegetation or chemical stabilizer
- b. Implement any necessary drainage mitigation
- c. Revegetate any disturbed areas

**MM 3.16-2a: Federal Emergency Management Agency Flood Zone Mapping and Strategic Construction Siting and Facility Placement.** Prior to the preparation of the Final Flood Hazard Assessment (Mitigation Measure MM 3.16-3a) and the Grading Plan (Mitigation Measure MM 3.16-4a), the developer would consult with the Federal Emergency Management Agency for flood zone mapping services of the estimated area of impact on Edwards Air Force Base that is currently unmapped. Once flood risks are determined by the Federal Emergency Management

1 Agency, these official flood zone boundaries would be incorporated into the final version of all  
2 technical hydrology and flood-related documents prepared for the project so that appropriate design  
3 recommendations for the projects can be made. Based on specific flood zone information,  
4 construction staging areas and final project structures would be sited to avoid existing hydrologic  
5 features (including flood zones and drainages) to the maximum extent possible.

6 **MM 3.16-3a: Final Flood Hazard Assessment.** Prior to construction, a Final Flood Hazard  
7 Assessment shall be prepared for the project. The Final Flood Hazard Assessment shall describe  
8 the existing flood risks onsite and how the project structures would be designed to incorporate the  
9 requirements of the Kern County Floodplain Management Ordinance. The existing flood risks on  
10 the Edwards Air Force Base portion of the site shall be determined through developer coordination  
11 with the Federal Emergency Management Agency (see Mitigation Measure MM 3.16-2a). For any  
12 solar arrays installed within flood zones, final design of the solar arrays shall include 1 foot of  
13 freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished  
14 floor of any permanent structures. Solar panel sites shall be graded to direct potential flood waters  
15 into channels adjacent to the existing and proposed right of ways without increasing the water  
16 surface elevations more than 1 foot or as otherwise required by Kern County's Floodplain  
17 Management Ordinance. The Final Flood Hazard Assessment shall be approved by the Floodplain  
18 Management Section of the Kern County Public Works Department prior to the issuance of a  
19 grading permit for the project.

20 **MM 3.16-4a: Grading Plan.** Prior to commencement of construction or decommissioning  
21 activities, the developer shall prepare a Grading Plan per the Kern County Grading Code and Kern  
22 County Grading Guidelines. The Grading Plan shall include the location of all existing drainages  
23 onsite, project grading details and the drainage devices and erosion control features that would be  
24 installed onsite to minimize excess site runoff, erosion and sedimentation. Examples of features  
25 installed onsite that would minimize runoff, erosion and sedimentation include energy dissipaters,  
26 and water quality inlets. The plan shall also disclose flood protection measures implemented for  
27 structures onsite as identified in the Flood Hazard Assessment (see Mitigation Measure MM 3.16-  
28 3a). Flood zone information used in the preparation of the grading plan would be based on flood  
29 zone maps obtained from developer consultation with FEMA (see Mitigation Measure MM 3.16-  
30 2a). The Grading Plan shall be approved by Kern County Public Works – Engineering prior to  
31 issuance of a grading permit.

32 **MM 3.16-5a: Hydrologic Analysis and Drainage Plan.** Prior to the issuance of a grading permit,  
33 the project proponent shall complete a hydrologic study and drainage plan designed to evaluate and  
34 minimize potential increases in runoff from the project site. The study shall include, but is not  
35 limited to the following:

- 36 1. Numerical stormwater model for the project site, and would evaluate existing and proposed  
37 (with project) drainage conditions during storm events ranging up to the 100-year event.
- 38 2. The study shall also consider potential for erosion and sedimentation in light of modeled  
39 changes in stormwater flow across the project area that would result from project  
40 implementation.
- 41 3. The drainage plan would include engineering recommendations to be incorporated into the  
42 project and applied within the site boundary. Engineering recommendations will include  
43 measures to offset increases in stormwater runoff that would result from the project, as well  
44 as implementation of design measures to minimize or manage flow concentration and  
45 changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding  
46 on-site or off-site.

- 1           4. The final design of the solar arrays shall include one-foot of freeboard clearance above the  
2           calculated maximum flood depths for the solar arrays or the finished floor of any permanent  
3           structures. Solar panel sites located within a 100-year floodplain shall be graded to direct  
4           potential flood waters without increasing the water surface elevations more than one foot  
5           or as required by Kern County’s Floodplain Ordinance.
- 6           5. The hydrologic study and drainage plan shall be prepared in accordance with the Kern  
7           County Grading Code and Kern County Development Standards, and approved by the Kern  
8           County Public Works Department prior to the issuance of grading permits.

9           **3.16.5.2 Gen-tie Mitigation Measures**

10          **MM 3.16-1b: Stormwater Pollution Prevention Plan.** Prior to issuance of a grading permit for  
11          construction or decommissioning for the generation tie-line installation, the developer shall submit  
12          a Stormwater Pollution Prevention Plan to the Kern County Engineering, Surveying, and Permit  
13          Services Department that specifies best management practices to prevent all construction pollutants  
14          from contacting stormwater, with the intent of keeping sediment and other pollutants from moving  
15          offsite and into receiving waters. The requirements of the Stormwater Pollution Prevention Plan  
16          shall be incorporated into design specifications and construction contracts. Best management  
17          practices categories employed onsite would include erosion control, sediment control, good  
18          housekeeping, and post-construction. Best management practices for the generation tie-line  
19          construction phase shall include, but not be limited to, those listed below.

- 20           1. Erosion Control
- 21           a. Use of existing roadways to the maximum extent possible
- 22           b. Limiting grading to the minimum area necessary for construction, operation and  
23           decommissioning of the project
- 24           c. Encourage maintenance of existing topography and limit vegetation  
25           disturbance/removal such as through mowing to the maximum extent possible
- 26           2. Sediment Control
- 27           a. Implementing fiber rolls and sand bags around drainage areas and the site perimeter
- 28           b. Stockpiling and disposing of demolition debris, concrete, and soil properly
- 29           c. Installation of a stabilized construction entrance/exit and stabilization of disturbed  
30           areas
- 31           3. Good Housekeeping
- 32           a. Implement proper protections for fueling and maintenance of equipment and vehicles
- 33           b. Manage waste and aggressively control litter
- 34           4. Post Construction
- 35           a. Stabilize soil in disturbed areas either by revegetation or chemical stabilizer
- 36           b. Implement any necessary drainage mitigation
- 37           c. Revegetate any disturbed areas

38          **MM 3.16-2b: Federal Emergency Management Agency Flood Zone Mapping and Strategic**  
39          **Construction Siting and Facility Placement.** Prior to the preparation of Final Flood Hazard  
40          Assessment and Grading Plan the developer would consult with the Federal Emergency  
41          Management Agency for flood zone mapping services of the estimated area of impact on generation

1 tie line routes that are currently unmapped. Once flood risks are determined by the Federal  
2 Emergency Management Agency, these official flood zone boundaries would be incorporated into  
3 the final version of all technical hydrology and flood-related documents prepared for the project so  
4 that appropriate design recommendations for the projects can be made. Based on specific flood  
5 zone information, construction staging areas and final project structures would be sited to avoid  
6 existing hydrologic features (including flood zones and drainages) to the maximum extent possible.

7 **MM 3.16-3b: Final Flood Hazard Assessment.** Prior to construction, a Final Flood Hazard  
8 Assessment shall be prepared for the project. The Final Flood Hazard Assessment shall describe  
9 the existing flood risks onsite and how the project structures would be designed to incorporate the  
10 requirements of the Kern County Floodplain Management Ordinance. The existing flood risks on  
11 the generation tie line routes shall be determined through developer coordination with the Federal  
12 Emergency Management Agency. For any generation tie line routes installed within flood zones,  
13 final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated  
14 maximum flood depths. Generation tie line routes shall be graded to direct potential flood waters  
15 into channels adjacent to the existing and proposed right of ways without increasing the water  
16 surface elevations more than 1 foot or as otherwise required by Kern County's Floodplain  
17 Management Ordinance. The Final Flood Hazard Assessment shall be approved by the Floodplain  
18 Management Section of the Kern County Engineering, Surveying, and Permit Services Department  
19 prior to the issuance of a grading permit for the project.

20 **MM 3.16-4b: Grading Plan.** Prior to commencement of generation tie-line construction or  
21 decommissioning activities, the developer shall prepare a Grading Plan per the Kern County  
22 Grading Code and Kern County Grading Guidelines. The Grading Plan shall include the location  
23 of all existing drainages onsite, project grading details and the drainage devices and erosion control  
24 features that would be installed along the generation tie line routes to minimize excess site runoff,  
25 erosion and sedimentation. Examples of features installed onsite that would minimize runoff,  
26 erosion and sedimentation include energy dissipaters and water quality inlets. The plan shall also  
27 disclose flood protection measures implemented for structures onsite as identified in the Flood  
28 Hazard Assessment. Flood zone information used in the preparation of the Grading Plan would be  
29 based on flood zone maps obtained from developer consultation with FEMA. The Grading Plan  
30 shall be approved by County prior to issuance of a grading permit.

31 **MM 3.16-5b: Hydrologic Analysis and Drainage Plan.** Prior to the issuance of a grading permits  
32 for the generation tie-lines, the project proponent shall complete a hydrologic study and drainage  
33 plan designed to evaluate and minimize potential increases in runoff from the generation tie line  
34 routes. The study shall include, but is not limited to the following:

- 35 1. Numerical stormwater model for the generation tie-line site, and would evaluate existing  
36 and proposed (with project) drainage conditions during storm events ranging up to the 100-  
37 year event.
- 38 2. The study shall also consider potential for erosion and sedimentation in light of modeled  
39 changes in stormwater flow across the project area that would result from project  
40 implementation.
- 41 3. The drainage plan would include engineering recommendations to be incorporated into the  
42 project and applied within the site boundary. Engineering recommendations will include  
43 measures to offset increases in stormwater runoff that would result from the installation of  
44 generation tie lines, as well as implementation of design measures to minimize or manage  
45 flow concentration and changes in flow depth or velocity so as to minimize erosion,  
46 sedimentation, and flooding onsite or offsite.

- 1           4. The hydrologic study and drainage plan shall be prepared in accordance with the Kern  
2           County Grading Code and Kern County Development Standards, and approved by the Kern  
3           County Public Works Department prior to the issuance of grading permits for the  
4           generation tie-line installation.

### 5    **3.16.6 Residual Impacts after Mitigation**

6    Mitigation Measures MM 3.9-1a, MM 3.9-1b, MM 3.16-1a, MM 3.16-1b, MM 3.16-2a, MM 3.16-  
7    2b, MM 3.16-3a, MM 3.16-3b, MM 3.16-4a, MM 3.16-4b, MM 3.16-5a, and MM 3.16-5b would  
8    substantially reduce potential impacts related to water quality, erosion, siltation, and flooding by  
9    requiring implementation of preventative measures and precautions and compliance with  
10   regulatory requirements. These measures also require hazardous substances are appropriately  
11   handled and spills are appropriately addressed.

12   Although unlikely, following implementation of the mitigation measures, it is possible that water  
13   quality degradation, erosion, siltation, and/or flooding could occur. No other residual impacts are  
14   expected to occur as a result of construction, operation and maintenance, and/or decommissioning  
15   of the proposed project or as a result of an alternative. Implementation of the Proposed Action is  
16   not expected to result in adverse impacts under NEPA or significant impacts under CEQA related  
17   to hydrology and water quality.

18

# 1 CHAPTER 4

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## 2 CEQA Alternatives

### 3 4.1 Introduction

4 This section of the EIS/EIR describes Kern County’s CEQA project objectives, the CEQA  
5 alternatives eliminated from further consideration, and the CEQA alternatives selected for analysis.  
6 This section also discusses the CEQA Environmentally Superior Alternative to be determined by  
7 Kern County.

8 CEQA requires that an EIR describe a range of reasonable alternatives to the proposed project or  
9 to the location of the proposed project that could feasibly avoid or lessen any significant  
10 environmental impacts of the proposed project while attaining most of the project’s basic  
11 objectives. An EIR also must compare and evaluate the environmental effects and comparative  
12 merits of the alternatives. This chapter describes alternatives considered but eliminated from further  
13 consideration (including the reasons for elimination), and compares the environmental impacts of  
14 several alternatives retained with those of the proposed project.

15 The following are key provisions of the CEQA Guidelines (Section 15126.6):

- 16 • The discussion of alternatives shall focus on alternatives to the proposed project or its  
17 location that are capable of avoiding or substantially lessening any significant effects of  
18 the proposed project, even if these alternatives would impede to some degree the attainment  
19 of the proposed project objectives, or would be more costly.
- 20 • The No Project Alternative shall be evaluated, along with its impacts. The no project  
21 analysis shall discuss the existing conditions at the time the Notice of Preparation was  
22 published, as well as what would be reasonably expected to occur in the foreseeable future  
23 if the proposed project were not approved, based on current plans and consistent with  
24 available infrastructure and community services.
- 25 • The range of alternatives required in an EIR is governed by a “rule of reason”; therefore,  
26 the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The  
27 alternatives shall be limited to ones that would avoid or substantially lessen any of the  
28 significant effects of the proposed project. The EIR then examines the alternatives which  
29 the lead agency determines could feasibly attain most of the proposed project’s objectives.
- 30 • For alternative locations, only locations that would avoid or substantially lessen any of the  
31 significant effects of the proposed project need be considered for inclusion in the EIR.

- 1       • An EIR need not consider an alternative whose effects cannot be reasonably ascertained  
2       and whose implementation is remote and speculative.

3       The range of feasible alternatives is selected and discussed in a manner to foster meaningful public  
4       participation and informed decision making. Among the factors that may be taken into account  
5       when addressing the feasibility of alternatives (as described in Section 15126.6(f)(1) of the CEQA  
6       Guidelines) are environmental impacts, site suitability, economic viability, social and political  
7       acceptability, technological capacity, availability of infrastructure, General Plan consistency,  
8       regulatory limitations, jurisdictional boundaries, and whether the developer could reasonably  
9       acquire, control, or otherwise have access to an alternative site. An EIR need not consider an  
10      alternative whose effects could not be reasonably identified, whose implementation is remote or  
11      speculative, and that would not achieve the basic project objectives.

12     The proposed project has the potential to have significant, unavoidable adverse effects on:

- 13       • Aesthetics  
14       • Air Quality

15     Mitigation measures outlined in these issue area's respective sections would reduce impacts;  
16     however, the impacts would remain significant and unavoidable. As a result, CEQA requires that  
17     an alternatives analysis be prepared to discuss alternatives to the proposed project that are capable  
18     of avoiding or substantially lessening effects on these resources. The significant and unavoidable  
19     impacts of the proposed project are discussed below.

## 20     **4.2 Significant Impacts of the Proposed Project after** 21     **Mitigation**

### 22     **4.2.1 Aesthetics**

23     The industrial nature of the facilities, when introduced into the project viewshed, would  
24     substantially change the existing visual character of the landscape as viewed from sensitive  
25     receptors from around the site (Impact 3.1-1). The proposed facility would substantially modify  
26     views in an area which is currently defined by undeveloped and rural lands.

27     Mitigation measures are incorporated to reduce the severity of aesthetics impacts. Mitigation  
28     Measures MM 3.1-1a and MM 3.1-2a for the solar facility portion of the project and Mitigation  
29     Measure MM 3.1-3b for the gen-tie portion of the project would reduce lighting and glare impacts  
30     of the project. Mitigation Measure MM 3.5-4a for the solar facility portion of the project and  
31     Mitigation Measure MM 3.1-1b for the gen-tie portion of the project would incorporate drought  
32     tolerant planting and native revegetation restoration plans to ensure the site naturally achieves  
33     native plant diversity, consistent with conditions prior to implementation of the project. Mitigation  
34     Measure MM 3.1-3a for the solar facility portion of the project and Mitigation Measure MM 3.1-  
35     2b for the gen-tie portion of the project would reduce impacts that could occur from the collection  
36     of debris along the project site's boundaries. However, there are no feasible mitigation measures  
37     that can be implemented to preserve the existing open space landscape character at the project site

1 while at the same time developing a solar energy facility. It is expected that even with effective  
2 implementation of Mitigation MM 3.5-4a for the solar facility portion of the project and Mitigation  
3 Measure MM 3.1-1b for the gen-tie portion of the project, the residual impacts associated with land  
4 scarring and vegetation clearance would remain for several years given the difficulty of successful  
5 revegetation in an arid environment. This would result in an unavoidable, long-term adverse impact  
6 to visual resources. While it is not expected the proposed project would create a new source of  
7 substantial light that would adversely affect nighttime views in the area, any light would be subject  
8 to Mitigation Measure MM 3.1-1a for the solar facility portion of the project and Mitigation  
9 Measure MM 3.1-3b for the gen-tie portion of the project, and would be directed downward and  
10 shielded to focus illumination on the desired areas only. However, an unavoidable, long-term,  
11 adverse impact to visual resources would result in a cumulative level. Impacts to visual resources  
12 as rated utilizing standardized criteria would remain significant and unavoidable despite  
13 implementation of these mitigation measures. The proposed project, coupled with the other  
14 surrounding solar projects, would significantly alter the character of the landscape, as well as  
15 nighttime lighting impacts, and is cumulatively considerable.

## 16 4.2.2 Air Quality

17 The proposed project would result in criteria pollutant emissions during construction, operation,  
18 and maintenance, and decommissioning. Construction-related emissions are expected to be below  
19 Eastern Kern Air Pollution Control District (EKAPCD) significance thresholds for construction  
20 vehicle emissions, except for PM<sub>10</sub> indirect mobile emissions, despite any mitigation and would  
21 therefore be significant and unavoidable. Indirect mobile emissions would not exceed any of the  
22 applicable significance thresholds, and given the long distance of the project site to the nearest  
23 sensitive receptors, the project would not result in significant impacts related to exposing sensitive  
24 receptors to emissions of hazardous air pollutants. Long-term emissions from the proposed project  
25 would consist of vehicular emissions from maintenance and operations employees as well as  
26 cleaning and maintenance equipment. Long-term emissions would consist of fugitive dust  
27 emissions and exhaust emissions from vehicles. Emissions from decommissioning would be similar  
28 to those generated during construction. Mitigation Measures MM 3.3-1a through MM 3.3-9a for  
29 the solar facility portion of the project site and MM 3.3-1b through 3.3-6b for the gen-tie portion  
30 of the site would substantially reduce potential impacts associated with implementation of dust and  
31 exhaust preventative measures and precautions. Even with implementation of those mitigation  
32 measures, PM<sub>10</sub> during construction would still be in violation of the EKAPCD standards and thus  
33 would result in a significant and unavoidable impact. Cumulative impacts could result from  
34 construction of the project in conjunction with other projects in the area. Proposed project emissions  
35 of ozone precursors due to grading activities and the use of heavy-duty diesel equipment would  
36 combine with emissions from cumulative projects to contribute to the current nonattainment status  
37 of these pollutants within the Mojave Desert Air Basin, resulting in a cumulatively considerable  
38 impact.

## 4.3 CEQA Project Objectives

As described in Section 1.0, *Introduction and Purpose and Need*, the following objectives have been established for the proposed project and will aid decision makers in the review of the project and associated environmental impacts.

### 4.3.1 Project Objectives

The Applicant's objectives include the following:

- Establish a solar photovoltaic (PV) generating facility greater than 100 megawatts (MW) in order to assist the state of California in achieving the Renewable Portfolio Standard (RPS) for 2030, by providing a significant new source of renewable energy (California State Assembly Bill [AB] 32, Senate Bill [SB] 1078, SB 107 and SB 2).
- Supply clean, safe, renewable energy.
- Produce and transmit electricity at a competitive cost and in a manner that is eligible for commercial financing.
- Use technology that is available, proven, efficient, easily maintained, recyclable, and environmentally sound.
- Support the economic development of Kern County, and the State of California.
- Enhance existing electrical distribution infrastructure and provide greater support to existing and future customer loads.
- Ensure that the development plans support County operations in a manner consistent with County plans.
- Minimize environmental effects by:
  - Using existing electrical distribution facilities, rights-of-way, roads, and other existing infrastructure, where practicable;
  - Minimizing impacts on threatened and/or endangered species;
  - Minimizing water use; and
  - Reducing greenhouse gas (GHG) emissions.
- Advance Department of Defense energy resilience and security goals by optimizing the value of under-utilized Air Force real property assets consistent with Department of Defense Instruction 4170.11, Installation Energy Management and the Air Force Energy Flight Plan, 2017-2036.

## 4.4 Project Summary

The Air Force Proposed Action is to lease land to a developer for the construction, operation, and maintenance of the Edwards Air Force Base (AFB) Solar Project, a solar PV renewable energy project (proposed project, or Proposed Action) at Edwards AFB. The final scale of the Proposed Action is anticipated to be up to 750 MW, with the generated energy distributed to investor owned utilities, municipalities, and other energy off-takers. The construction scale of such a project would

1 require multiple Air Force outgrants for the development of up to 4,000 acres of non-excess land  
2 at Edwards AFB. It should be noted that the study area evaluated in this EIS/EIR included 5,800  
3 acres. Through the siting and initial design process, the Air Force was able to minimize impacts to  
4 environmentally sensitive areas.

5 The proposed project would occur in three phases. Phase one actions would include the construction  
6 of renewable energy solar arrays and electrical interconnection lines and the infrastructure  
7 necessary to connect to the grid. Once these are constructed and installed, phase two actions would  
8 include the operation and maintenance of proposed project facilities. The third and final phase  
9 would occur at the expiration of the lease term, which is projected to reasonably expire at the end  
10 of the useful life of the proposed project infrastructure, anticipated not to exceed 35 years. The  
11 solar facility on the leased Air Force land would be decommissioned and the land returned to the  
12 Air Force for another land use. Detailed provisions concerning the construction, operation,  
13 maintenance and generalized decommissioning actions of the solar PV system, including  
14 environmental management and mitigation measures, would be addressed in the lease agreement.  
15 The proposed lease, once implemented, would be in place through all project phases and the  
16 elements of environmental management, mitigation, and best management practices (BMPs) would  
17 occur during project phases, as appropriate. Any significant or major changes in the project  
18 activities analyzed in this EIS/EIR may require additional NEPA considerations, including  
19 supplemental environmental analysis under Air Force's Environmental Impact Analysis Process  
20 (EIAP) and CEQA regulations.

21 A Franchise Agreement with the County would be required to use County franchise rights for  
22 routing of a 230-kilovolt (kV) generation-tie (gen-tie) line from the proposed solar facility to a  
23 point of interconnection where power generated by the project can be delivered to the grid. Points  
24 of interconnection may include the Southern California Edison Windhub Substation and/or the  
25 privately owned Westwind Substation. The gen-tie line would allow electricity generated from the  
26 project to reach high-voltage transmission lines that would be able to carry power to utility  
27 customers. The proposed 230 kV gen-tie line would run across publicly and privately owned  
28 property within Kern County. The final gen-tie route will be determined by the ability to acquire  
29 access easements for construction and installation of the line from public and private entities.

## 30 **4.5 CEQA Alternatives Eliminated from Further** 31 **Consideration**

32 Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of  
33 the project objectives, are infeasible, or do not avoid or substantially reduce any significant  
34 environmental effects (CEQA Guidelines, Section 15126.6 [c]). Alternatives that are remote or  
35 speculative, or the effects of which cannot be reasonably predicted, also do not need to be  
36 considered (CEQA Guidelines, Section 15126.6 [f][3]). Kern County considered several  
37 alternatives to reduce the project's impacts on aesthetics, air quality, and noise. Per CEQA, the lead  
38 agency may make an initial determination as to which alternatives are feasible and warrant further  
39 consideration and which are infeasible. The following alternatives were initially considered but

1 were eliminated from further consideration in this EIS/EIR because they do not meet project  
2 objectives or are infeasible.

### 3 4.5.1 Wind Energy Project Alternative

4 The Wind Energy Project Alternative would involve the use of wind energy as an alternative for  
5 development of a solar facility. As with solar power, power from the wind is an alternative to energy  
6 production from coal, oil, or nuclear sources. Wind energy provides the following benefits:

- 7 • It is a renewable and infinite resource.
- 8 • The electrical generation is free of any emissions during operations, including carbon  
9 dioxide (i.e., GHGs).
- 10 • It is a free resource after the capital cost of installation (excluding maintenance).
- 11 • Energy production from wind power would not require the significant water usage  
12 associated with coal, nuclear, and combined-cycle sources.

13 Turbines used in wind farms for commercial production of electric power are usually three-bladed  
14 units that are pointed into the wind by computer-controlled motors. The wind farm would consist of  
15 a group of wind turbines placed where electrical power is produced. The individual turbines would  
16 be interconnected with a medium-voltage power collection system and a communications network.  
17 At a substation, the medium-voltage electrical current would be increased through a transformer  
18 before connection to the high-voltage transmission system. Compared with traditional energy  
19 sources, the environmental effects of wind power are relatively minor. Unlike fossil fuel power  
20 sources, wind power consumes no fuel and emits no air pollution. However, wind farms would not  
21 decrease short-term construction-related air emissions. Unlike the proposed project, wind turbines  
22 would have the potential to affect avian species in the local area.

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

- 30 • It would result in additional/greater potential biological resources impacts than the  
31 proposed project.
- 32 • It would not substantially reduce the significant cumulative impacts associated with  
33 construction-related air emissions.
- 34 • It would substantially increase the significant aesthetic impacts associated with the  
35 proposed project as wind turbines would be much taller than solar panels and more visible  
36 from many viewpoints rather than only the elevated hiking trails.
- 37 • It would have the potential to create greater long-term noise impacts than a solar PV  
38 project.

## 4.5.2 Alternative Site Alternative

This alternative would involve the development of the proposed project on another site located within Kern County. Although undetermined at this time, the alternative project site would likely remain in the Antelope Valley desert region of the county, similar to the proposed project. This alternative is assumed to involve construction of a PV solar facility greater than 100 MW on an approximate 4,000-acre site. CEQA Guidelines 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site Alternative is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the proposed project.

The Antelope Valley has attracted many renewable energy development applications, which are being proposed for vacant land or land with a history of agricultural uses. The availability of alternative sites is constrained by the renewable energy market itself. While other sites with similar size, configuration and use history may exist in the same general region (Antelope Valley), based on the known general conditions in the area and the magnitude of the proposal, an alternative project site in the area is likely to have similar significant project and cumulative impacts after mitigation, including cumulatively significant impacts to aesthetics, air quality, noise, and possibly agricultural and biological resources.

In addition, an alternative site for the project is not considered to be “potentially feasible” if there is no suitable site within the control of the developer that would reduce project impacts. Here, there is no alternative site within the developer’s control where project development would result in fewer project impacts. Given the size of the proposed project and the project objectives, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the proposed project.

## 4.6 CEQA Alternatives Selected for Analysis

A range of alternatives with the potential to attain most of the basic objectives of the proposed project but avoid or substantially lessen significant impacts is analyzed below. Each alternative is discussed in relation to the objectives of the proposed project. The Environmentally Superior Alternative, as required by CEQA, is described in the “Environmentally Superior Alternative” section. The following alternatives are analyzed in detail:

- Alternative A: 4,000-Acre Enhanced Use Lease (EUL) (Preferred Alternative)
- Alternative B: 1,500-Acre EUL
- Alternative C: No Action/No Project
- Alternative D: No Ground-Mounted Utility-Solar Development – Distributed Commercial and Industrial Rooftop Solar Only

**Table 4-1** provides a summary of the relative impacts and feasibility of each alternative and **Table 4-2** provides a summary and side-by-side comparison of the potential impacts of the alternatives and the proposed project. A complete discussion of each alternative is also provided below.

1  
2

**TABLE 4-1**  
**SUMMARY OF DEVELOPMENT ALTERNATIVES**

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative A: Proposed Project	<ul style="list-style-type: none"> <li>• Solar panels on approximately 4,000 acres would generate up to 750 MW of electricity and deliver it to the grid.</li> <li>• Construction of an associated gen-tie line of approximately 16 miles in total length.</li> </ul>	N/A
Alternative B: Reduced Project	<ul style="list-style-type: none"> <li>• Solar panels on approximately 1,500 acres would generate greater than 100 MW of electricity and deliver it to the grid.</li> <li>• Same gen-tie line as under the proposed project.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces all construction-related impacts</li> <li>• Avoids significant impacts to air quality</li> </ul>
Alternative C: No Action/No Project	<ul style="list-style-type: none"> <li>• No development would occur on the project site.</li> <li>• Base operations at Edwards AFB would continue without benefit of the EUL or lease consideration.</li> <li>• Non-excess lands would not be utilized.</li> </ul>	<ul style="list-style-type: none"> <li>• Required by CEQA</li> <li>• Avoids all significant impacts except for noise</li> </ul>
Alternative D: No Ground-Mounted Utility-Solar Development – Distributed Commercial and Industrial Rooftop Solar Only	<ul style="list-style-type: none"> <li>• Industrial-scale PV solar distributed on rooftops throughout region.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoids an EUL, CUP, and franchise agreement for project site, but may require other entitlements (such as a CUP or variance) on other sites</li> <li>• Avoids direct significant impacts to aesthetics and air quality</li> <li>• Potential reduction in construction-related impacts (air quality, water use, traffic, etc.)</li> </ul>

### 3 4.6.1 Alternative B: 1,500-Acre EUL

4 This alternative would be similar to the proposed project but would be reduced in scale by  
5 approximately 2,500 acres. It would entail the construction, operation, and decommissioning of a  
6 solar facility greater than 100 MW on 1,500 acres of non-excess real property located within the  
7 project site.

#### 8 4.6.1.1 Impacts Compared to Project Impacts

9 The following compares environmental impacts associated with the Reduced Project Alternative to  
10 those identified for the proposed project.

#### 11 *Aesthetics*

12 Alternative B construction would cause temporary visual impacts due to the presence of equipment,  
13 materials and workforce. However, construction activities would occur over a shorter period of  
14 time than Alternative A. During operations and maintenance, the industrial nature of the Alternative  
15 B solar facility would change the visual character of the landscape as viewed from sensitive  
16 receptors for the life of the project, albeit to lesser degree than Alternative A. Like Alternative A,

1 construction activities and operational facilities would be visible from SR 14, Sierra Highway and  
2 Backus Road. However, construction along Trotter Avenue would be minimal under Alternative  
3 B, as this alternative layout extends primarily to the north and south, and eliminates construction  
4 to the east parallel to Trotter Avenue. The Visual Quality Rating Analyses for Key Observation  
5 Point (KOP) 1 and KOP 2 would be the same for Alternative B as rated for Alternative A in Tables  
6 3.1-4 and 3.1-5 in Section 3.1, *Aesthetics*, of this EIS/EIR. Alternative B would not be visible from  
7 KOP 3, which is situated along Trotter Avenue as the solar facilities associated with Alternative B  
8 are sited further west and would not be visible from KOP 3. Therefore, the Visual Quality Rating  
9 shown in Table 3.1-6 would not be applicable to Alternative B. Implementation of Alternative A  
10 would result in potentially significant impacts as viewed from KOPs 1 and 2 resulting from a  
11 change to the area's visual quality and visual character. These ratings would be the same for  
12 Alternative B. Therefore, like Alternative A, Alternative B would have a significant and  
13 unavoidable impact concerning the substantial degradation of the existing visual character or  
14 quality of the site and its surroundings.

15 With regard to creating a new source of substantial light or glare that would adversely affect  
16 daytime or nighttime views in this area, Alternative B would result in similar impacts as Alternative  
17 A; however, construction would occur over a shorter period of time than Alternative A, and thus  
18 construction lighting would be used under a shorter period of time. Also, Alternative B would  
19 require less security lighting than Alternative A due to the reduced size of the solar facility.  
20 However, similar to Alternative A, if improperly designed or oriented, Alternative B lighting may  
21 result in light trespass that falls outside the site boundaries. With respect to glare impacts,  
22 Alternative B has a smaller footprint, and therefore would create less glare than Alternative A.

### 23 ***Air Quality***

24 Alternative B would result in approximately one-third the physical development of Alternative A,  
25 but is expected to result in one half of the construction emissions and about two-thirds of the  
26 operational emissions of Alternative A but would not rise above the EKAPCD thresholds.  
27 Construction PM<sub>10</sub> emissions would exceed the applicable U.S. Department of Environmental  
28 Protection General Conformity thresholds resulting in less-than-significant impacts.

### 29 ***Agricultural Resources***

30 Because Alternative B would result in approximately one-third the physical development of  
31 Alternative A, it is likely that this alternative would result in reduced impacts to agricultural  
32 resources. However, because the construction and operation of the facility would remain the same  
33 as in Alternative A, the significance conclusions for the impacts identified for each phase of  
34 Alternative B (construction, operation and maintenance, decommissioning) would be the same as  
35 described above for Alternative A. Impacts relating to agricultural resources would be less than  
36 significant.

### 1 **Airspace Management and Use**

2 Like Alternative A, the gen-tie line poles would be the tallest structures constructed under  
3 Alternative B, which may be up to 180 feet in height. In addition, the Alternative B gen-tie route is  
4 in the same location as proposed under Alternative A. Therefore, Alternative B impacts concerning  
5 air space penetration would be the same identified for Alternative A. Because the Alternative B  
6 solar facility would be located within the same solar facility boundary as Alternative A, impacts  
7 involving communication system interference would be the same as identified for Alternative A.  
8 Alternative B would use the same PV solar technology as Alternative A, but would result in  
9 substantially fewer PV panels installed at the solar facility site. Therefore, with respect to glare,  
10 Alternative B would have a reduced glare producing surface area than Alternative A. As determined  
11 for Alternative A, the Air Force concluded that glare and glint from solar panels did not affect the  
12 performance of pilots in their training missions. Results of the Solar Glare Hazard Analysis Tool  
13 analysis for Alternative A are applicable to Alternative B because Alternative B consists of the  
14 same PV solar technology constructed within the same solar facility location. However, Alternative  
15 B would result in considerably fewer solar panels installed at the solar facility site. Thus, it is likely  
16 that Alternative B would have little to no impact involving glint/glare. As determined for  
17 Alternative A, airspace management and use impacts under Alternative B would be reduced to a  
18 less-than-significant level with implementation of the same mitigation measures as identified for  
19 Alternative A.

### 20 **Biological Resources**

21 Alternative B would result in approximately one-third the physical development and construction  
22 disturbance of Alternative A and therefore biological resources impacts would be comparably  
23 reduced in most cases. However, because this alternative would result in the same types of direct  
24 and indirect impacts to biological resources, significance conclusions for the impacts identified for  
25 each phase of Alternative B (Construction, Operation and Maintenance, and Decommissioning)  
26 would be the same as described for Alternative A. Mitigation described for Alternative A would be  
27 the same as required for Alternative B.

### 28 **Cultural and Paleontological Resources**

29 Alternative B would involve one-third the amount of ground disturbance compared to Alternative  
30 A and has the potential to adversely affect approximately 89 known cultural resources, of which  
31 57 may be eligible for the National Register of Historic Places (NRHP). The estimated quantity of  
32 cultural resources affected by Alternative B would be substantially less than estimated for  
33 Alternative A. Alternative A has the potential to adversely affect 314 cultural resources, of which  
34 229 may be eligible for the NRHP. Like Alternative A, Alternative B may involve excavations that  
35 extend down into older geological deposits where significant vertebrate fossil remains may be  
36 encountered. However, the reduced size of Alternative B would result in fewer excavations, which  
37 would lessen the likelihood of encountering significant paleontological resources. While impacts  
38 to cultural and paleontological resources would be reduced under Alternative B, they would not be  
39 eliminated. However, as determined for Alternative A, cultural and paleontological impacts under  
40 Alternative B would be reduced to a less-than-significant level with implementation of the same  
41 mitigation measures as identified for Alternative A.

### 1 **Geology and Soils**

2 Because Alternative B would result in approximately one-third the physical development of  
3 Alternative A, it is likely that this alternative would result in reduced impacts to geology, minerals,  
4 and soils. However, because the construction and operation of the facility would remain the same  
5 as in Alternative A, the significance conclusions for the impacts identified for each phase of  
6 Alternative B (construction, operation and maintenance, decommissioning) would be the same as  
7 described above for Alternative A. Impacts relating to geology, minerals, and soils would be less  
8 than significant.

### 9 **Greenhouse Gas Emissions**

10 Under this alternative, fewer construction-related GHG emissions would occur because less area  
11 would be developed. Alternative B would produce less renewable energy than Alternative A.  
12 However, GHG savings generated by the offset of fossil-fuel based electricity generation are  
13 expected to remain substantially greater than the total GHG emissions produced by the  
14 construction, operation, and decommissioning of the proposed project. Because Alternative B  
15 would result in development on one-third of the acreage of Alternative A and would produce  
16 one-third of the energy Alternative A would produce, Alternative B would result in offsetting  
17 approximately one-third of GHG emissions as Alternative A, for a total estimated offset of 247,978  
18 MT CO<sub>2e</sub> per year.

### 19 **Hazardous Materials and Safety**

20 Because Alternative B would result in approximately one-third the physical development of  
21 Alternative A, it is likely that this alternative would result in a reduced construction schedule,  
22 thereby reducing the amount of time that hazardous materials are used or stored onsite. However,  
23 because this alternative would result in use and storage of the same types of hazardous materials as  
24 Alternative A, significance conclusions for the impacts identified for each phase of Alternative B  
25 (Construction, Operation and Maintenance, and Decommissioning) would be the same as described  
26 above for Alternative A. Impacts concerning the routine transport, use, or disposal of hazardous  
27 materials; accidental release of hazardous materials; and project implementation within listed  
28 hazardous materials sites would be less than significant with mitigation incorporated.

29 The reduced scale of Alternative B would likely reduce the amount of time heavy machinery would  
30 be onsite during construction and decommissioning activities, thereby incrementally reducing the  
31 potential to generate sparks that could ignite a wildfire, the entire project would be located within  
32 a Moderate Fire Hazard Severity Zone as identified by the California Department of Forestry and  
33 Fire Protection State and Local Responsibility Maps. Therefore, impacts related to exposure of  
34 people or structures to a significant risk of loss, injury, or death involving wildland fires would be  
35 the same as identified for Alternative A, that is, less than significant.

1     **Infrastructure**

2     Because Alternative B would result in approximately one-third of the physical development of  
3     Alternative A, it is likely that this alternative would require less water and would generate less  
4     wastewater and solid waste during construction and operation. Therefore, Alternative B would  
5     result in fewer impacts compared to Alternative A. Impacts concerning compliance with  
6     wastewater treatment requirements, construction of wastewater and stormwater facilities,  
7     expansion of water supply entitlements and disposal of solid waste would be less than significant  
8     with mitigation incorporated.

9     **Land Use**

10    Alternative B would be located on the same sites and would be subject to the same plans and  
11    policies as Alternative A. Because Alternative B would consist of the same land uses as Alternative  
12    A, significance conclusions for Alternative B would be the same as Alternative A. Therefore,  
13    Alternative B would be considered consistent with all applicable plans, policies, and regulations  
14    and impacts would be less than significant.

15    **Noise**

16    Construction-related noise associated with development of a solar generating facility from heavy  
17    equipment operation, truck deliveries, and worker commute trips would still occur with the under  
18    Alternative B. However, while impacts to sensitive receptors during construction would be similar  
19    to those discussed for Alternative A, Alternative B would only include construction of solar arrays  
20    on the western boundary of the site (along Lone Butte Road and eastern Trotter Avenue). The  
21    closest sensitive receptors to the solar facility under Alternative B would be approximately 350  
22    feet, in comparison to 100 feet under Alternative A. Therefore, impacts to sensitive receptors  
23    located on Trotter Avenue along the eastern portion of the site would be reduced compared to  
24    Alternative A. Further, because of the reduced acreage of this alternative, construction of  
25    Alternative B would require less time than Alternative A, reducing in a reduction in construction  
26    noise. the noise level of transformers at the nearest sensitive receptor would be approximately 20  
27    dBA, and noise from the proposed gen-tie line would be less than 42 dBA, which would be less  
28    than the 65 dBA Ldn for outdoor activity areas and 45 dBA Ldn for interior living areas, as outlined  
29    in the Kern County Municipal Code (Chapter 8.36, Noise Control). In addition, noise levels  
30    associated with operation of Alternative B would be reduced further relative to Alternative A and  
31    Alternative B would be in compliance with the Kern County Noise Ordinance. As a result, this  
32    alternative would result in a smaller workforce during construction and construction work would  
33    occur over a shorter period of time. Therefore, impacts would be reduced compared to Alternative  
34    A.

35    **Public Services**

36    Because Alternative B would result in approximately one-third of the physical development of  
37    Alternative A, this alternative would require fewer construction workers and operations staff.  
38    Because impacts to fire and police services are based on the number of workers in the project area,  
39    Alternative B would result in fewer impacts to fire and police services compared to Alternative A  
40    and impacts would be less than significant.

## 1 **Transportation**

2 Because Alternative B would result in approximately one-third the physical development of  
3 Alternative A, it is likely that this alternative would result in a reduced construction schedule,  
4 thereby reducing the number of construction workers and trucks, resulting in a reduction in the  
5 vehicle trip generation associated with construction. However, construction of Alternative B is  
6 considered to have similar significance conclusions for the impacts identified for each phase  
7 of Alternative B (construction, operation and maintenance, and decommissioning) as for  
8 Alternative A, requiring measures to mitigate the impacts to a less-than-significant level. Impacts  
9 under project operation and maintenance under Alternative B would be less than significant;  
10 no mitigation required.

## 11 **Hydrology and Water Quality**

12 As described, the significance conclusions for impacts to hydrology and water quality under  
13 Alternative A would be less than significant. The types of facilities installed and the general  
14 location would be the same for both Alternative A and Alternative B. Further, Alternative B would  
15 result in approximately one-third of the physical development of Alternative A; it is likely that this  
16 alternative would result in reduced impacts to hydrology and water quality. Therefore, impacts  
17 related to hydrology and water quality under Alternative B would also be less than significant.

### 18 **4.6.1.2 Conclusion**

19 Alternative B involves a smaller project and as a result reduces air quality impacts to a less-than-  
20 significant level, with mitigation. This alternative would still result in significant and unavoidable  
21 project and cumulative impacts to aesthetics because the industrial nature of the Alternative B solar  
22 facility would change the visual character of the landscape as viewed from sensitive receptors for  
23 the life of the project. In addition, Alternative B would also result in significant and unavoidable  
24 impacts to noise because Alternative B would result in a substantial temporary increase in ambient  
25 noise levels in the project vicinity during construction. However, this alternative would not realize  
26 the same magnitude of GHG emissions reductions as Alternative A.

27 Although this alternative would achieve some of the project objectives, it would not achieve the  
28 goals of developing facilities to produce the necessary amount of clean electricity to help achieve  
29 California's renewable energy goals to the degree associated with the proposed project. It would  
30 supply less clean, safe, renewable energy for residences and would support the economic  
31 development of Kern County, and the State of California to a lesser degree. Alternative B would  
32 also offset one-third of the GHG emissions offset by Alternative A. Alternative B would also  
33 enhance existing electrical distribution infrastructure and provide greater support to existing and  
34 future customer loads to a lesser degree than Alternative A.

## 4.6.2 Alternative C: No Action/No Project Alternative

Pursuant to Section 15126.6(e)(2) of the CEQA Guidelines, the No Action/No Project Alternative 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 the 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.”*

Under the No Project Alternative, the existing land uses on the project site would continue to operate as they do under existing conditions. The proposed EUL action and solar array development would not occur. Base operations at Edwards AFB would continue without benefit of the EUL or lease consideration.

### 4.6.2.1 Impacts Compared to Project Impacts

The following compares environmental impacts associated with the No Project Alternative to those identified for the proposed project.

#### ***Aesthetics***

Under the No Project Alternative, the site would retain its current visual character. Solar panels would not be placed on the site, and therefore, no views of the site would be altered. No new lighting would be installed. Thus, no significant and unavoidable aesthetics impacts would occur by implementation of this alternative.

#### ***Air Quality***

Implementation of the No Project Alternative would result in no impacts to air quality. Emissions related to solar facility construction activities would be eliminated, and short-term construction emissions would not have a cumulative impact with related projects that could violate standards. However, the beneficial impacts associated with the displacement of criteria pollutant emissions that would otherwise emanate from the existing fossil-fuel-powered generation sources would not be realized.

#### ***Agricultural Resources***

Implementation of the No Project Alternative would result in no impacts to agricultural resources.

#### ***Airspace Management and Use***

Under this alternative, none of the components proposed under Alternative A would be built. If Alternative C were implemented, there would be no changes to onsite conditions; therefore, Alternative C would result in no impacts related to consistency with the ALUCP and air safety hazards.

### 1 **Biological Resources**

2 This alternative would not result in any impacts to biological resources on the project site, including  
3 general vegetation and wildlife resources, special-status plants, special-status wildlife, and  
4 sensitive habitats.

### 5 **Cultural Resources**

6 Under the No Project Alternative, the project site would remain as is, and no ground-disturbing  
7 activities would occur, and no historical, cultural, archeological, or paleontological resources would  
8 be potentially impacted. Therefore, impacts to unknown cultural resources from the No Project  
9 Alternative would be less than the proposed project.

### 10 **Geology and Soils**

11 The No Project Alternative would not involve in-ground construction work or earth-moving  
12 activities; therefore, this alternative would not increase risks related to exposure of people or  
13 structures to geologic or seismic hazards. Thus, impacts related to geology and soils would be less  
14 than those of the proposed project.

### 15 **Greenhouse Gas Emissions**

16 Under the No Project Alternative, heavy equipment operation, truck deliveries, and trips by  
17 commuting construction workers associated with construction of the proposed project would not  
18 occur. Therefore, construction emissions that contribute to GHGs would be eliminated. However,  
19 the potential offset or displacement of GHGs from operation of the solar power generating  
20 facility, compared with traditional gas- or coal-fired power plants, would not be realized, and  
21 GHG impacts from this alternative would be greater than those of the proposed project.

### 22 **Hazardous Materials and Safety**

23 In contrast to the proposed project, the No Project Alternative would result in no impacts related to  
24 wildfire; the routine transport, use, storage, or disposal of hazardous materials; accidental release  
25 of hazardous materials; or development within listed hazardous materials sites.

### 26 **Infrastructure**

27 Under No Project Alternative, none of the components proposed under Alternative A would be  
28 built. If this alternative were implemented, there would be no changes to onsite conditions or the  
29 existing environmental setting as described above. Therefore, there would be no need for new or  
30 expanded water supplies, and no generation of wastewater or solid waste. The No Project  
31 Alternative would result in no impacts related to compliance with wastewater treatment  
32 requirements, construction of wastewater and stormwater facilities, expansion of water supply  
33 entitlements and disposal of solid waste.

### 34 **Land Use**

35 This alternative would result in no impacts related to conflicts with land use plans, policies, or  
36 regulations.

1 **Noise**

2 In contrast to the proposed project, the No Project Alternative would not create short-term noise  
3 from construction of a solar generating facility from heavy equipment operation, truck deliveries,  
4 and worker commute trips. The site is expected to maintain its current noise levels and impacts  
5 related to noise under this alternative would be less than those of the proposed project.

6 **Public Services**

7 Under this alternative, none of the components proposed under Alternative A would be built. If  
8 Alternative C were implemented, there would be no changes to onsite conditions and no need for  
9 construction or operations staff at the project site. Therefore, there would be no change in the need  
10 for fire and police services and Alternative C would result in no impacts to public services.

11 **Transportation**

12 The No Project Alternative would not result in impacts to transportation and traffic. In contrast  
13 with the proposed project, the No Project Alternative would not introduce construction and  
14 operational-related trips, and existing traffic patterns and volumes on nearby roadways would  
15 remain unchanged. Therefore, impacts related to transportation and traffic from the No Project  
16 Alternative would be less than those of the proposed project.

17 **Hydrology and Water Quality**

18 This alternative has the potential to reduce impacts to hydrology and water quality compared to the  
19 proposed project because no construction would occur and the related drainage and water quality  
20 effects would not occur. Alternative C would result in no impacts concerning hydrology and water  
21 quality.

22 **4.6.2.2 Conclusion and Relationship to Project Objectives**

23 The No Project Alternative would avoid the significant and unavoidable impacts associated with  
24 the proposed project and reduce impacts associated with all resource areas. As the project site would  
25 remain undeveloped, there would be no impact with regard to all resources areas.

26 **4.6.3 Alternative D: No Ground-Mounted Utility-Solar**  
27 **Development – Distributed Commercial and Industrial**  
28 **Rooftop Solar Only**

29 This alternative would involve development of a number of geographically distributed small to  
30 medium solar PV systems (100 kilowatts to 1 MW) on the rooftops of existing commercial and  
31 industrial facilities throughout Kern County. Depending on the type of solar modules installed and  
32 the type of tracking equipment used (if any), a similar or greater amount of acreage may be required  
33 to attain the same scale as the proposed project. Due to constraints such as space and shading, many  
34 rooftop solar PV systems would not attain the same level of efficiency per acre with respect to  
35 ground-mounted utility-scale solar PV generation. This objective would enable the generation of  
36 the same amount of electricity as the proposed project, but it would be for onsite use only and  
37 would not assist load serving entities in meeting their RPS goals. Similar to the proposed project,

1 this alternative would be designed to operate year-round using an array of PV modules to convert  
2 solar energy directly to electrical power. Power generated by such distributed solar PV systems  
3 would be consumed onsite by the commercial or industrial facility without requiring the  
4 construction of new electrical substation or transmission facilities.

### 5 **4.6.3.1 Impacts Compared to Project Impacts**

6 The following compares environmental impacts associated with Alternative D, the No Ground-  
7 Mounted Utility-Solar Development – Distributed Commercial and Industrial Rooftop Solar Only  
8 Alternative to those identified for the proposed project.

#### 9 ***Aesthetics***

10 This alternative would result in fewer aesthetics impacts compared to the proposed project. Under  
11 this alternative, undeveloped land would not be developed for solar facility uses, but rather existing  
12 developed areas would be modified. In many cases, the installation of solar panels on large rooftops  
13 would be visually unobtrusive or unnoticeable from receptors at ground level. In other  
14 circumstances, the installation of rooftop solar panels may be visible, but would not likely affect  
15 the visual character or scenic quality of an area. The exceptions may be if rooftop solar panels were  
16 proposed on historic buildings, which could affect the historic character and integrity of the  
17 buildings. Implementation of this alternative may require historic surveys and investigations to  
18 evaluate the eligibility of potentially historic structures that are over 50 years old, and either  
19 avoidance of such buildings, or incorporation of design measures to minimize impacts on historic  
20 integrity of historically significant structures to less-than-significant levels. Thus, impacts to  
21 aesthetic resources associated with this alternative would be less than those of the proposed project.

#### 22 ***Air Quality***

23 This alternative would likely result in fewer impacts to air quality compared to the proposed project.  
24 Even though installation of multiple small facilities over a large area is much less efficient than  
25 constructing and maintaining solar facilities on one site, no construction activities or ground  
26 disturbance would occur under this alternative. As a result, emissions related to grading activities  
27 would be eliminated and emissions from heavy equipment would be greatly reduced. Vehicular  
28 mobile-source emissions from commuting workers associated with installation of the equipment  
29 under this alternative would be similar to the construction worker trip emissions generated by the  
30 proposed project. However, construction emissions from delivery of materials and workers may  
31 be less than, similar to, or even greater than, those associated with the proposed project due to  
32 the potential distances that construction sites would be located. Thus, impacts to air quality during  
33 construction would be less than those of the proposed project. Similarly, air quality during  
34 operation would be less than those of the proposed project as maintenance activities would take  
35 place closer to population centers, reducing vehicle miles traveled.

#### 36 ***Agricultural Resources***

37 This alternative would likely result in fewer impacts to agricultural resources compared to the  
38 proposed project. Even though installation of multiple small facilities over a large area is much less  
39 efficient than constructing and maintaining solar facilities on one site, no construction activities or

1 ground disturbance would occur under this alternative. As a result, conflicts with the Williamson  
2 Act contracts, or other land currently used for agricultural purposes, would be reduced with  
3 implementation of Alternative D.

#### 4 ***Airspace Management and Use***

5 Alternative D does not involve the construction of a gen-tie line as proposed under Alternative A.  
6 Therefore, Alternative D would have fewer impacts involving airspace penetration than Alternative  
7 A. This alternative would install solar panels on existing structures throughout Kern County and  
8 would not be capable of communication systems interference. Alternative D involves the  
9 installation of the same solar technology as Alternative A, and would therefore have the same  
10 capability of producing glint and glare. However, the Alternative D solar panels would be installed  
11 over much smaller areas dispersed throughout Kern County, and would not form a large contiguous  
12 glare producing area as proposed under Alternative A. As determined for Alternative A, the Air  
13 Force concluded that glare and glint from solar panels did not affect the performance of pilots in  
14 their training mission. Therefore, Alternative D would have a less-than-significant impact  
15 involving glint and glare flight hazards.

#### 16 ***Biological Resources***

17 This alternative would result in fewer impacts to biological resources compared to the proposed  
18 project. Under this alternative, the project site would remain as is and only currently developed  
19 areas would be modified. Developed areas would be unlikely to provide habitat for threatened and  
20 endangered species. Under this alternative, there would be no potential for disturbance of sensitive  
21 or endangered species because no project construction or operational activities would occur on  
22 undeveloped lands. Therefore, potential impacts to biological resources under this alternative  
23 would be less than those of the proposed project.

#### 24 ***Cultural Resources***

25 This alternative would reduce potential impacts to cultural resources compared to the proposed  
26 project. Under this alternative, the project site would remain as is and only previously developed  
27 areas would be modified; there would be no potential for disturbance or damage to cultural  
28 resources (historic, archaeological, paleontological) at or near the site. If rooftop solar were  
29 proposed on historic buildings, the alternative could affect the historic character and integrity of  
30 the buildings. Implementation of this alternative would require historic surveys and investigations  
31 to evaluate the eligibility of potentially historic structures that are over 50 years old, and either  
32 avoidance of such buildings, or incorporation of design measures to minimize impacts on historic  
33 integrity of historically significant structures to less-than-significant levels. Therefore, the potential  
34 impacts to unknown cultural resources would be less than those of the proposed project.

#### 35 ***Geology and Soils***

36 This alternative would result in fewer impacts to geology and soils compared to the proposed  
37 project. This alternative would involve installation of solar equipment on existing structures and  
38 would not require new, in-ground construction. The installations would only minimally expose  
39 people or structures to adverse impacts resulting from geologic or seismic hazards when compared

1 to construction of the proposed project. Therefore, the potential impact on geology and soils from  
2 this alternative would be less than that of the proposed project.

### 3 ***Greenhouse Gas Emissions***

4 Unlike the proposed project, this alternative would not include ground-disturbing activities, and  
5 would result in lower construction-related GHG emissions from operation of construction vehicles,  
6 trucks and other heavy grading and site preparation equipment. However, the GHG emissions from  
7 delivery of materials and workers may be similar to, or even greater than, those associated with the  
8 proposed project due to the potentially greater distances that construction sites would be located.  
9 Therefore, construction emissions that contribute to GHGs would be similar to those of the  
10 proposed project. During project operation, the potential offsets or displacement of GHGs,  
11 compared to traditional gas- or coal-fired power plants, would be realized to the same degree as  
12 they would under the proposed project because of similar renewable power generating potential.  
13 Thus, GHG impacts from this alternative would be similar to those of the proposed project.

### 14 ***Hazardous Materials and Safety***

15 In contrast to the proposed project, under this alternative, the project site would as is and no  
16 construction activities would occur that could potentially disturb hazardous materials in the soil.  
17 The installation of rooftop solar equipment on existing, disturbed sites, may involve the minimal  
18 use of chemicals, including fuels, solvents, paint, lubricants, and other potentially hazardous  
19 materials. However, as with the proposed project, standard BMPs would ensure that exposure to  
20 potentially hazardous materials used or found onsite would be reduced or minimized. Therefore,  
21 the potential impact from hazards and hazardous materials would be less than that of the proposed  
22 project.

### 23 ***Infrastructure***

24 Under this alternative, solar equipment would be installed on existing structures and would not  
25 require new, in-ground construction. Therefore, there would be no need for new or expanded water  
26 supplies, and no generation of wastewater or solid waste. Therefore, the potential impact would be  
27 less than that of the proposed project.

### 28 ***Land Use***

29 Under this alternative, solar equipment would be installed on existing structures and would not  
30 require new, in-ground construction. Construction would take place through the local building and  
31 planning processes and would therefore be consistent with current zoning as well as existing land  
32 use plans, policies, and regulations. Therefore, this alternative would result in similar less-than-  
33 significant impacts as the proposed project.

### 34 ***Noise***

35 Under this alternative, the project site would remain as is and rooftops of commercial and industrial  
36 buildings in developed areas that may be adjacent to noise sensitive land uses would be modified.  
37 No construction activities or ground disturbance would occur at the project site. As a result, noise  
38 related to these activities would be eliminated. However, noise related to construction activities

1 could occur adjacent to residences and would likely result in noise impacts to a greater number of  
2 sensitive receptors within the developed areas. Also, vehicular noise from commuting workers  
3 associated with installation of the equipment by this alternative would be similar to the construction  
4 worker trips generated by the proposed project, but would likely occur near sensitive receptors and  
5 would be spread out over a larger area and have the potential to impact greater numbers of sensitive  
6 receptors. As a result, potential impacts from this alternative would be greater than those of the  
7 proposed project.

### 8 ***Public Services***

9 This alternative would not involve construction on a new site that would require increased demand  
10 of public services, but would utilize structures that are currently being served by existing public  
11 services. This alternative would reduce impacts on public services compared to the proposed  
12 project.

### 13 ***Transportation and Traffic***

14 This alternative would require a similar number of vehicular trips to transport and install the solar  
15 panels. However, the trips would be more dispersed and would not congregate in one location,  
16 thereby affecting the performance of surrounding roadways. This alternative would have nominal  
17 effects on transportation and traffic, and impacts would be less than those of the proposed project.

### 18 ***Hydrology and Water Quality***

19 Under this alternative, drainage patterns on the project site would not be altered, and potential water  
20 quality impacts on the project site would not occur. There would be little to no increase in  
21 impervious surface. Potential impact on hydrology and water quality from this alternative would  
22 be reduced compared to the proposed project.

## 23 **4.6.3.2 Conclusion and Relationship to Project Objectives**

24 This alternative would avoid significant and unavoidable impacts to project-level and cumulative  
25 aesthetics, and air quality that would occur as a result of implementation of the proposed project.  
26 This alternative would also result in potentially reduced impacts to biological resources, cultural  
27 resources, geology and soils, hazards and hazardous materials, public services, traffic and utilities,  
28 water resources, and service systems. However, it would result in greater impacts to noise because  
29 construction may take place in closer proximity to sensitive receptors. This alternative would  
30 achieve most of the project objectives, such as offsetting energy generated from fossil fuels and  
31 helping to achieve California's renewable energy goals, while investing in Kern County and  
32 creating jobs; however, there are a number of drawbacks to this alternative that include, but are not  
33 limited to:

- 34 • The system would not likely be built out within a timeframe that would be similar to that  
35 of the proposed project.
- 36 • Given the distributed nature of such a network of facilities, construction, management, and  
37 maintenance would not be as efficient, and total capital costs would likely be higher.



<b>Environmental Resource</b>	<b>Alternative A: Proposed Project (Up to 4,000-acre Solar PV Project)</b>	<b>Alternative B: Reduced Scale Project (1,500-acre Solar PV Project)</b>	<b>Alternative C: No Action / No Project</b>	<b>Alternative D: Rooftop Solar</b>
Land Use	Less than Significant	Less than Significant Same as A	No Impact Reduced Compared to A	Less than Significant Similar to A
Noise	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Increased Compared to A
Public Services	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Transportation	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A
Hydrology and Water Quality	Less than Significant	Less than Significant Reduced Compared to A	No Impact Reduced Compared to A	Less than Significant Reduced Compared to A

## 1 **4.8 Environmentally Superior Alternative**

2 As presented in the comparative analysis above, and as shown in Table 4-2, there are a number of  
3 factors in selecting the environmentally superior alternative. An EIR must identify the  
4 environmentally superior alternative to the proposed project.

5 Alternative C, the No Action/No Project Alternative, would be environmentally superior to the  
6 proposed project on the basis of its minimization or avoidance of physical environmental impacts.  
7 Section 15126.6(e)(2) of the CEQA Guidelines states that if the No Project Alternative is found to  
8 be environmentally superior, “the EIR shall also identify an environmentally superior alternative  
9 among the other alternatives.”

10 Alternative B, the 1,500-Acre EUL Alternative, would result in incrementally fewer impacts than  
11 the proposed project (Alternative A) with the exception of GHG emissions. GHG impacts would  
12 be greater under Alternative B, since the potential offset or displacement of GHGs from operation  
13 of the solar generating facility, compared with traditional gas- or coal-fired power plants, would  
14 not be realized to the same extent. Alternative B would reduce the solar facility footprint by  
15 approximately 62.5 percent from Alternative A and would therefore provide approximately 37.5  
16 percent of the GHG emission offsets described for the proposed project. Due to this reduction in  
17 GHG emission offsets, GHG impacts under Alternative B would be greater than the proposed  
18 project. Even though impacts would be reduced in comparison to the proposed project, this  
19 alternative would result in significant and unavoidable impacts to aesthetics and air quality.

# 1 CHAPTER 5

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## 2 Consequences and Other CEQA and NEPA 3 Statutory Requirements

### 4 5.1 Environmental Effects Found to Be Less Than 5 Significant

6 Section 15128 of the CEQA Guidelines requires that an EIR “contain a statement briefly indicating  
7 the reasons that various possible significant effects of a project were determined not to be  
8 significant and were therefore not discussed in detail in the EIR.”

9 Kern County has engaged the public in scoping of the environmental document. Comments  
10 received during scoping have been considered in the process of identifying issue areas that should  
11 receive attention in the EIR. The contents of this EIS/EIR were established based on a notice of  
12 preparation (NOP) prepared in accordance with the CEQA Guidelines and on public and agency  
13 input received during the scoping process (see Appendix A). Issues that were found to have no  
14 impact or less than significant impacts during preparation of the NOP do not need to be addressed  
15 further in this EIS/EIR. Based on the findings of the NOP and the results of scoping, a determination  
16 was made that the following resource areas would not be significantly impacted by the proposed  
17 project, and are therefore not addressed in this EIS/EIR:

- 18 • Population and Housing
- 19 • Recreation

20 For all other resource areas, this EIS/EIR contains a comprehensive analysis of potential  
21 environmental impacts.

22 After further study and environmental review in this EIS/EIR, project-level impacts in the  
23 following areas would be less than significant:

- 24 • Agricultural Resources
- 25 • Airspace Management and Use
- 26 • Environmental Justice
- 27 • Geology, Minerals, and Soils
- 28 • Greenhouse Gas Emissions (project and cumulative)
- 29 • Land Use and Planning (project)
- 30 • Socioeconomics

1 After further study and environmental review in this EIS/EIR, project-level impacts in the  
2 following areas would be reduced to less-than-significant levels with mitigation measures:

- 3 • Biological resources (project and cumulative)
- 4 • Paleontological resources (project and cumulative)
- 5 • Hazards and hazardous materials (project and cumulative)
- 6 • Infrastructure (project and cumulative)
- 7 • Land use and planning (cumulative)
- 8 • Public services (project and cumulative)
- 9 • Traffic and transportation (project and cumulative)
- 10 • Hydrology and water quality (project and cumulative)

## 11 5.2 Significant Environmental Effects that Cannot Be 12 Avoided

13 Section 15126.2(b) of the CEQA Guidelines requires that the EIS/EIR describe any significant  
14 impacts, including those that can be mitigated but not reduced to less-than-significant levels.  
15 Potential environmental effects of the proposed project and proposed mitigation measures are  
16 discussed in detail in Chapter 4, *CEQA Alternatives*.

17 Impacts in the following areas, shown in **Table 5-1**, would be significant and unavoidable, even  
18 with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent  
19 feasible.

20 **TABLE 5-1**  
21 **SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT**

Resources	Project Impacts	Cumulative Impacts
Aesthetics (project and Cumulative)	<b>Impact 3.1-1:</b> The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings resulting in a <b>significant and unavoidable impact</b> .	The project's contribution to the visible industrialization of the desert landscape would constitute a <b>significant and unavoidable visual impact</b> when considered in the context of existing cumulative conditions and reasonably foreseeable projects, both within the immediate project viewshed and in a somewhat broader context that encompasses the project and surroundings as a whole.
Air Quality (project and Cumulative)	<b>Impact 3.2-1:</b> The project would conflict with or obstruct implementation of the applicable air quality plan resulting in a <b>significant and unavoidable impact</b> . <b>Impact 3.2-2:</b> The proposed project could violate an applicable air quality standard or contribute substantially to an existing or contribute substantially to an existing or projected air quality violation resulting in a <b>significant and unavoidable impact</b> . <b>Impact 3.2-3:</b> Construction and operation of the proposed project could result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under applicable federal or state ambient air quality standards resulting in a <b>significant and unavoidable impact</b> .	Construction of the proposed project with other cumulative projects would result in a net increase of criteria pollutants for which the project region is nonattainment under applicable federal and state ambient air quality standards. This would result in a <b>significant and unavoidable impact</b> during construction.

## 5.3 Irreversible Impacts

The NEPA Guidelines (40 CFR 1502.16) and CEQA Guidelines Section 15126.2 require a discussion of any irreversible or irretrievable commitments of resources that would be caused by implementation of the proposed project, or one of the action alternatives; the relationship between short-term uses and long-term productivity of the environmental; and any growth-inducing impacts.

Resources irreversibly or irretrievably committed to a proposed action are those used on a long-term or permanent basis. This includes the use of nonrenewable resources such as metal, wood, fuel, paper, aggregate, and other natural resources. These resources are considered irretrievable in that they would be used for a proposed action when they could have been conserved or used for other purposes. Another irreversible or irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

Development of the project would require a permanent commitment of natural resources resulting from the direct consumption of fossil fuels, construction materials, the manufacture of new equipment, some of which would not be recyclable at the end of the project's useful lifetime, and energy required for the production of materials. After 35 years, the project could be decommissioned and the leased Air Force land would be returned to the Air Force for another land use in accordance with regulations in effect at that time. Upon completion of the 35-year lease, the owner may extend the enhanced-use lease (EUL) with the Air Force or decommission and remove the system and its components. A collection and recycling program would be executed to promote recycling of project components and minimize disposal in landfills. However, full site recovery to its pre-project state may not be possible given the 35-year lifespan of the project and the many unknown variables that could affect the site. As part of the EUL agreement, the lessee would, at no cost to the government, regrade the leased land to the extent reasonably necessary to smoothly conform the disturbed contours of the surface to minimize erosion, and, to the extent feasible, the lessee shall revegetate disturbed areas of the leased land in a manner compatible with undisturbed vegetation. Currently, the project site is primarily undeveloped and contains natural vegetation generally characteristic of Mojave Desert scrub habitats.

The project is a renewable energy project intended to generate solar energy to reduce reliance on fossil fuels. Over the 35-year life of the project, this renewable energy project would contribute incrementally to the reduction in demand for fossil fuels used to generate electricity, thereby resulting in a positive effect of the commitment of nonrenewable resources to the project.

## 5.4 Significant Cumulative Impacts

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.

1 This EIS/EIR has considered the potential cumulative effects of the proposed project. Impacts for  
2 the following issue areas have been found to be cumulatively considerable and could not be reduced  
3 to a less-than-significant level with mitigation:

- 4 • Aesthetics
- 5 • Air Quality

## 6 **5.5 Growth Inducement**

7 The General Plan of Kern County recognizes that certain forms of growth are beneficial, both  
8 economically and socially. Section 15126.2(d) of the CEQA Guidelines provides the following  
9 guidance on growth-inducing impacts: a project is identified as growth-inducing if it “could foster  
10 economic or population growth, or the construction of additional housing, either directly or  
11 indirectly, in the surrounding environment.”

12 Growth inducement can be a result of new development that requires an increase in employment,  
13 removes barriers to development, or provides resources that lead to secondary growth. With respect  
14 to employment, the proposed project would not induce substantial growth because it would  
15 temporarily employ as many as 550 people during construction, most of whom are expected to be  
16 based in the nearby areas of Rosamond, Lancaster, or other local cities. The total amount of staff  
17 required for operation and maintenance of the solar facility would be determined after the facility  
18 design is finalized. Typically, it is expected to be staffed by up to 10 full-time personnel for  
19 operation, maintenance, and security of the solar facility. Therefore, the project would not result in  
20 a large increase in long-term employment that would significantly induce growth.

21 While the project would contribute to energy supply, which is one factor of population growth, the  
22 development of power infrastructure is a response to increased market demand and statewide  
23 regulatory mandates, including the Renewable Portfolio Standard mandate, and is not a factor that  
24 induces new growth. Kern County planning documents already permit and anticipate a certain level  
25 of growth in the area of the project site, along with attendant growth in energy demand. It is this  
26 anticipated growth that drives energy-production projects, not vice-versa. The project would supply  
27 energy to accommodate and support existing demand and projected growth, but it would not foster  
28 any new growth beyond reasonable population forecasts assumed in the County’s General Plan.  
29 Therefore, any link between the project and growth in Kern County would be speculative.

30 In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of  
31 growth-inducing effects contained in the EIR for the Pine Tree Wind Development project was  
32 challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information  
33 about how additional electricity generated by the project would sustain further growth in the  
34 Los Angeles area. The court held that the additional electricity that the project would produce was  
35 intended to meet the current forecast of growth in the Los Angeles area. As such, the wind  
36 development project would not cause growth, and so it was not reasonable to require a detailed  
37 analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained  
38 similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the  
39 energy supply would not create growth has been upheld, because: (1) the additional energy would  
40 be used to ease the burdens of meeting existing energy demands within and beyond the area of the

1 project; (2) the energy would be used to support already-projected growth; or (3) the factors  
 2 affecting growth are so multifarious that any potential connection between additional energy  
 3 production and growth would necessarily be too speculative and tenuous to merit extensive  
 4 analysis. Thus, as has been upheld in the courts, this level of analysis is sufficient to inform the  
 5 public and decision makers of the growth-inducing impacts of the project.

## 6 **5.6 Energy Consumption**

7 CEQA Section 21100(b) requires that an EIR discuss and consider mitigation measures for the  
 8 potential energy impacts of proposed projects, with emphasis on avoiding or reducing inefficient,  
 9 wasteful, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines provides  
 10 guidance for assessing the significance of potential energy impacts. It provides three means of  
 11 achieving its ultimate goal of conserving energy:

- 12 1. Decreasing overall per capita energy consumption
- 13 2. Decreasing reliance on natural gas and oil
- 14 3. Increasing reliance on renewable energy sources

15 Consistent with Appendix F of the CEQA Guidelines, potential environmental impacts evaluated  
 16 in this section include:

- 17 1. The project's energy requirements by amount and fuel type for each stage of the project  
 18 including construction, operation, maintenance, and decommissioning
- 19 2. The effects of the project on energy resources, local and regional energy supplies, and  
 20 requirements for additional capacity
- 21 3. The effects of the project on peak and base period demands for electricity and other forms  
 22 of energy
- 23 4. The degree to which the project complies with existing energy standards
- 24 5. The project's projected transportation energy use requirements and its overall use of  
 25 efficient transportation alternatives

### 26 **5.6.1 California's Energy System**

#### 27 **5.6.1.1 Electricity**

28 The production of electricity requires the consumption or conversion of energy resources including  
 29 water, wind, oil, gas, coal, solar, geothermal, and nuclear sources. Of the electricity generated in  
 30 California, 49.9 percent is generated by natural gas-fired power plants, 0.16 percent is generated  
 31 by coal-fired power plants, 12.3 percent comes from large hydroelectric dams, and 9.6 percent  
 32 comes from nuclear power plants. The remaining 27.9 percent in-state total electricity production  
 33 is supplied by renewable sources including solar and wind power (CEC, 2016).

34 Natural gas supplies the largest portion of California's electricity market; natural gas-fired power  
 35 plants in California meet approximately 37 percent of the in-state electricity demand. Most of the

1 natural gas consumed in California comes from the Southwest, the Rocky Mountains, and Canada,  
2 while the remainder is produced in California.

3 California's Renewables Portfolio Standard (RPS) requires retail electricity sellers, including  
4 publicly owned utilities (POUs), to procure 33 percent of retail sales per year from eligible  
5 renewable sources by 2020. Currently, California receives 27.9 percent of its electricity from  
6 renewable sources including small hydroelectric generation (2.3 percent), biomass (3 percent),  
7 geothermal (5.8 percent), solar (10 percent), and wind (6.8 percent) (CEC, 2016). California leads  
8 the nation in electricity generation from non-hydroelectric renewable energy sources including  
9 geothermal power, wind power, fuel wood, landfill gas, and solar power. The state is also a leading  
10 generator of hydroelectric power (USEIA, 2017). The electricity generated and used in California  
11 is distributed via a network of transmission and distribution lines commonly called the power grid.

## 12 **5.6.1.2 Petroleum**

13 Approximately 36 percent of California's petroleum supply comes from in-state sources while  
14 52 percent is imported from foreign sources, and 12 percent is imported from Alaska (CEC, 2016).  
15 Crude oil is moved throughout California through a network of pipelines that carry it from both on-  
16 shore and off-shore oil wells to refineries located in the San Francisco Bay area, Los Angeles area,  
17 and the Central Valley (USEIA, 2016a). Currently, 17 petroleum refineries operate in California  
18 (USEIA, 2016a).

19 In 2014, California consumed approximately 629.5 million barrels (26.4 billion gallons) of  
20 petroleum (USEIA, 2016a). As of December 31, 2015, California has 2,845 million barrels of crude  
21 oil left in the state's reserves (USEIA, 2016a).

## 22 **5.6.2 Local Energy Systems**

### 23 **5.6.2.1 Southern California Edison**

24 Electrical services are provided to the project site by Southern California Edison (SCE). SCE  
25 provides electricity to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000  
26 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area  
27 (SCE, 2016)

28 SCE produces and purchases its energy from a mix of conventional and renewable generating  
29 sources. **Table 5-2** shows the electric power mix that was delivered to SCE's retail customers in  
30 2014.

31 SCE provides electricity in the vicinity of the project site but no electricity currently is available  
32 onsite. If distribution to the site is determined to be feasible, electric service could be extended to  
33 the site via a distribution power line that would be constructed, owned, and operated by SCE, and  
34 could replace some of the fuel use described below in Section 5.6.4 by replacing the use of a  
35 construction trailer generator.

1  
2

**TABLE 5-2**  
**ELECTRIC POWER MIX DELIVERED TO SCE RETAIL CUSTOMERS IN 2014**

Energy Resources	2014 SCE Power Mix	2013 CA Power Mix <sup>A</sup>
Eligible Renewable		
-- Biomass & waste	1%	3%
-- Geothermal	9%	4%
-- Small hydroelectric	0%	1%
-- Solar	4%	2%
-- Wind	10%	9%
Coal	0%	8%
Large Hydroelectric	3%	8%
Natural Gas	27%	44%
Nuclear	6%	9%
Other	0%	0%
Unspecified sources of power <sup>B</sup>	40%	12%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

<sup>A</sup> Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

<sup>B</sup> "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

SOURCE CEC, 2014.

### 3 **5.6.2.2 Los Angeles Department of Water and Power**

4 The Los Angeles Department of Water and Power (LADWP) provides electricity to approximately  
5 4 million people in a service area covering 465 square miles and operates the Barren Ridge-Rinaldi  
6 transmission line, to which the project may interconnect (LADWP, 2016a).

7 LADWP produces and purchases its energy from a mix of conventional and renewable generating  
8 sources. **Table 5-3** shows the electric power mix that was delivered to LADWP's retail customers  
9 in 2016.

1  
2

**TABLE 5-3  
ELECTRIC POWER MIX DELIVERED TO LADWP RETAIL CUSTOMERS IN 2011**

<b>Power Source</b>	<b>Percent (%) of Total Power Mix Delivered</b>
Natural Gas	25
Nuclear	10
Coal	37
Large Hydroelectric	3
Unspecified Sources	4
Eligible Renewables (21%):	
Geothermal	2
Wind	11
Biomass and Waste	4
Small Hydroelectric	1
Solar	3

SOURCE: LADWP, 2016b

3

### 4 5.6.3 Energy Conservation Standards

#### 5 5.6.3.1 State

##### 6 **California Senate Bill 350**

7 California Senate Bill 350 is the most recent update to the state’s RPS requirements, and requires  
8 publicly owned utilities and retail sellers of electricity in California to procure 33 percent of their  
9 electricity sales from eligible renewable sources by 2020, and 50 percent by the end of 2030.

10 Title 24, Part 6 of the California Code of Regulations is the California Energy Code, a section of  
11 the California Building Code that includes standards mandating energy conservation measures in  
12 new construction for heating, cooling, ventilation, water heating, and lighting. Since its  
13 establishment in 1977, these standards (along with standards for energy efficiency in appliances)  
14 have contributed to a reduction in electricity and natural gas usage and costs in California. The  
15 California Energy Commission produces, and the California Building Standards Commission  
16 subsequently adopts updates to these standards every 3 years to incorporate new energy efficiency  
17 technologies.

#### 18 5.6.3.2 Local

19 The following goals and policies identified in the Energy Element of the Kern County General Plan  
20 are relevant to this analysis (Kern County, 2009). The Kern County General Plan contains  
21 additional policies, goals, and implementation measures that are more general in nature and are not  
22 specific to development such as the proposed project. Therefore, they are not listed below, but all  
23 policies, goals, and implementation measures in the Kern County General Plan are incorporated by  
24 reference.

1 **Kern County General Plan Chapter 5: Energy Element**

2 Section 5.4.5 Solar Energy Development

3 Goal

4 Goal 1: Encourage safe and orderly commercial solar development.

5 Policies

6 Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve  
7 fossil fuel and improve air quality.

8 Policy 3: The County should permit solar energy development in the desert and valley  
9 planning regions that does not pose significant environmental or public health and  
10 safety hazards.

11 Policy 4: The County should encourage solar development in the desert and valley regions  
12 previously disturbed, and discourage development of energy projects on undisturbed  
13 land supporting state or federally protected plant and wildlife species.

14 Section 5.4.7 Transmission Lines

15 Goal

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

19 Policies

20 Policy 1: The County should encourage the development and upgrading of transmission lines  
21 and associated facilities (e.g., substations) as needed to serve Kern County's  
22 residents and access the County's generating resources, insofar as transmission lines  
23 do not create significant environmental or public health and safety hazards.

24 Policy 2: The County shall review all proposed transmission lines and their alignments for  
25 conformity with the Land Use, Conservation, and Open Space Element of this  
26 General Plan.

27 Policy 3: In reviewing proposals for new transmission lines and/or capacity, the County  
28 should assert a preference for upgrade of existing lines and use of existing corridors  
29 where feasible.

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

32 Policy 6: The County should encourage new transmission lines to be sited/configured to avoid  
33 or minimize collision and electrocution hazards to raptors.

1 **5.6.4 Energy Consumption Impacts of the Project**

2 **5.6.4.1 Energy Requirements and Effects on Local and Regional**  
 3 **Energy Supplies**

4 The following analysis includes energy consumption values that are based on estimates of the  
 5 project’s projected energy requirements through construction, operation and maintenance, and  
 6 decommissioning.

7 Direct energy use would include the consumption of petroleum fuel for vehicles and the use of  
 8 electricity for equipment and facilities. Indirect energy use includes the energy required to make  
 9 the materials and components used in construction of the project. This includes energy used for  
 10 extraction of raw materials, manufacturing, and transportation associated with manufacturing. As  
 11 described in Chapter 2, *Proposed Action, Project Description, and Alternatives*, all recyclable  
 12 wastes generated during construction, operation and maintenance, and decommissioning, including  
 13 photovoltaic panels, would be recycled at appropriate facilities. Through the recycling of these  
 14 materials, the project would achieve the maximum attainable recycling of depletable resources in  
 15 compliance with 42 U.S. Code (USC) Section 4331(b)(6).

16 **Construction**

17 Although construction-related energy consumption would occur only temporarily during the  
 18 construction period, it would represent irreversible consumption of finite natural energy resources.  
 19 Construction-related energy expenditures would include direct and indirect uses of energy in the  
 20 form of fuel (typically, diesel fuel for trucks and onsite equipment, and gasoline for commuter  
 21 vehicles). **Table 5-4** shows the estimated petroleum during construction. There are currently no  
 22 energy-consuming activities at the site; therefore, all energy consumption during project  
 23 construction would exceed the baseline.

24 **TABLE 5-4**  
 25 **CONSTRUCTION FUEL CONSUMPTION SUMMARY**

Year	Gallons	
	Diesel	Gas
Solar and Gen-tie Construction	300,388	231,860
Architectural Coating	0	0
<b>Total</b>	<b>300,387</b>	<b>231,860</b>
Average Annual	75,096	57,965

SOURCE ESA 2018

26 Temporary power for solar facility construction would be provided by mobile diesel-driven  
 27 generator sets and/or by temporary electrical service from the local power provider. The diesel  
 28 generators would be registered with the California Air Resources Board’s Portable Equipment  
 29 Registration Program.

## 1 **Operation and Maintenance**

2 The solar facility would require power for the electrical enclosures, substation equipment, tracker  
3 motors, service buildings, warehouses, and plant lighting. The energy-consuming activities of  
4 permanent employees would include daily trips to the site, site maintenance (roads and solar panel  
5 washing), and site security monitoring. **Table 5-5** shows the comparison of existing fuel  
6 consumption to estimates of the project's projected annual operational fuel consumption.

7 **TABLE 5-5**  
8 **ANNUAL OPERATIONAL FUEL CONSUMPTION**

	Gallons	
	Diesel	Gas
Existing	0	0
Proposed (2020)	1,658	9,281

SOURCE ESA 2018

9 The amount of petroleum consumed during operation would be substantially less than the amount  
10 consumed during construction but would still be the primary source of the energy consumed onsite.  
11 Compared to statewide annual petroleum fuel consumption, the project's use of each of these fuel  
12 types would represent less than one-thousandth of one percent.

13 During operation and maintenance, onsite electricity needs would be met by project-generated  
14 electricity or supplied by the local power provider. Substation protection equipment would be  
15 supplied by DC power provided by each substation control building's battery room. There may also  
16 be emergency generators located onsite as a backup source; however, such emergency generators  
17 may be needed only during construction and could be removed during operation.

18 The petroleum fuel and electrical energy consumed during operation and maintenance would  
19 exceed baseline conditions but still would be considered minimal, and would not be inefficient,  
20 wasteful, or unnecessary. Additionally, project operation would have a beneficial effect on the  
21 electricity supply to the grid and would help decrease reliance on coal power.

## 22 **Decommissioning**

23 During decommissioning, most of the energy consumed onsite is typically used by the petroleum-  
24 fueled construction vehicles and equipment used to dismantle the project. If electricity were  
25 required, it would be sourced from any still-operational panels, or from onsite petroleum-fueled  
26 generators. The exact amounts of diesel and gasoline required for decommissioning are unknown.  
27 However, the amount of energy required to decommission the facility would not be significantly  
28 different than the amount of energy that would be consumed each year during construction. As  
29 described above, compared to statewide petroleum fuel consumption, the project's use of these fuel  
30 types would be minimal.

31 Although the energy consumed during decommissioning would be greater than the baseline amount  
32 (zero), it would be a minimal and temporary use of energy.

1 The energy consumed during the lifetime (including decommissioning) of the project would be less  
2 than the energy generated throughout the lifetime of project. Overall, the project would produce a  
3 net energy gain. However, much of the project's energy consumption would be in the form of  
4 petroleum fuels, whereas the energy it would produce would be in the form of electricity. These  
5 energy types are generally not interchangeable (i.e., transportation primarily uses diesel and  
6 gasoline, while air conditioning and appliances typically use electricity). Therefore, the project  
7 would result in a net consumption of liquid petroleum fuels and a net supply of electricity to the  
8 regional grid. Additionally, decommissioning would return the project site to its baseline conditions  
9 in which no energy would be supplied or used onsite.

## 10 **Summary**

11 The energy consumed during each project phase would be greater than the baseline value used at  
12 the site. However, energy used during each phase of the project would be necessary to implement  
13 the project, and none of the proposed energy-consuming activities associated with each phase  
14 would be a wasteful, inefficient, or unnecessary use of energy. After the first phase of the project  
15 is operational, and throughout operation, the project would be a net electricity producer, and would  
16 have a beneficial effect during peak electricity demand periods, particularly on warm, sunny days  
17 when demand for air-conditioning increases and project output is at its highest. Additionally,  
18 decommissioning would restore the site to baseline conditions, making it a non-energy consuming  
19 site. The project would not have a significant impact with respect to fuel and electrical energy  
20 requirements or on local or regional energy supplies.

## 21 **5.6.4.2 Compliance with Energy Standards**

### 22 ***Construction and Decommissioning***

23 During construction and decommissioning, the developer would recycle all recyclable materials at  
24 appropriate facilities, and would therefore be in compliance with 42 USC Section 4331(b)(6).  
25 Additionally, the use of energy during construction and decommissioning would not be  
26 unnecessary, wasteful, or inefficient because it would be necessary for the completion of the project  
27 and because construction and decommissioning equipment would comply with all applicable fuel  
28 economy and energy efficiency standards. No adverse impact on efforts to achieve existing energy  
29 standards would result.

### 30 ***Operation and Maintenance***

31 The project would use solar energy technology, an eligible renewable energy resource that meets  
32 criteria set forth in California Public Utilities Code Section 399.12, Public Resources Code  
33 Section 25741, and *Renewables Portfolio Standard: Eligibility Guidebook* (2017

34 ). The permitting process for the project would require that the project comply with all applicable  
35 policies and standards. Thus, the project would comply with, directly support, and further efforts  
36 toward achieving existing energy standards. No adverse impact on efforts to achieve existing  
37 energy standards would result.

### 1 **5.6.4.3 Efficient Use of Transportation Fuels**

#### 2 ***Construction and Decommissioning***

3 **Impact 5-1: The project could result in an inefficient, wasteful, and/or unnecessary use of**  
 4 **energy for transportation of materials and worker commutes. (*Less than Significant with***  
 5 ***Mitigation Incorporated*)**

6 Construction and decommissioning of the project would consume diesel and gasoline as described  
 7 above, some of which would be used for transportation of materials and worker commutes. Although  
 8 the overall use of energy for each phase of the project is not considered inefficient, wasteful, or  
 9 unnecessary, the specific use of diesel and gasoline for worker commutes and haul trips would be  
 10 considered a significant adverse effect if each worker arrives at the site in a separate vehicle and haul  
 11 trips are not coordinated to the extent feasible to reduce transportation energy consumption. The site  
 12 is not accessible by public transportation; therefore, it is likely that workers would travel in single-  
 13 occupancy vehicles to the site. However, Mitigation Measure MM 5-1a for the solar facility portion  
 14 of the project and Mitigation Measure MM 5.1-1b for the gen-tie portion of the project would reduce  
 15 the project's construction- and decommissioning-related impacts on transportation energy use to a  
 16 less than significant level by requiring the developer to facilitate efficient means of transportation and  
 17 use of fuels by employees and haul trucks through limiting idling, implementing ridesharing  
 18 strategies, and planning haul trips as efficiently as is feasible through the implementation of a  
 19 Transportation Energy Management Plan.

#### 20 ***Operation and Maintenance***

21 Operation- and maintenance-related use of transportation energy would consist of employee  
 22 commutes, maintenance-related vehicle use onsite, and any necessary hauling of supplies and  
 23 wastes generated during this phase. Because of the low number of employees and the limited need  
 24 for deliveries and waste hauling throughout the operational period, it is anticipated that  
 25 transportation energy consumption would be low. The use of transportation energy for  
 26 maintenance-related trips would be necessary to the maintenance of the solar plant and related  
 27 facilities. Therefore, during operation and maintenance, the use of transportation energy would not  
 28 be considered inefficient, wasteful, or unnecessary.

#### 29 **Mitigation Measures**

##### 30 **Solar Facility Mitigation Measures**

31 **MM 5-1a: Transportation Energy Management Plan.** The developer shall develop and  
 32 implement a construction- and decommissioning-phase Transportation Energy Management Plan  
 33 in consultation with Kern County and Edwards AFB to reduce construction- and decommissioning-  
 34 related transportation energy consumption. The plan shall include but not be limited to the  
 35 following measures:

- 36 1. Require that onsite equipment and vehicle operators minimize equipment and vehicle  
 37 idling time either by shutting equipment off when not in use or by limiting idling time to a  
 38 maximum of 5 minutes.
- 39 2. Designate a Transportation Energy Manager (TEM) to coordinate ridesharing by  
 40 construction and decommissioning employees. The TEM shall encourage carpooling by  
 41 posting commuter ride sign-up sheets and maintaining and posting an employee home zip  
 42 code map.

- 1           3. Provide priority parking onsite for vehicles with two or more passengers.
- 2           4. When feasible, arrange for a single construction vendor who makes deliveries for several
- 3           items.
- 4           5. Plan construction delivery and waste hauling routes to eliminate unnecessary trips.
- 5           6. The plan shall be submitted to Kern County and to Edwards AFB for review and approval
- 6           prior to the start of construction.

7   **Gen-tie Mitigation Measures**

8   **MM 5-1b: Transportation Energy Management Plan.** The developer shall develop and  
9   implement a construction- and decommissioning-phase Transportation Energy Management Plan  
10   in consultation with Kern County to reduce construction- and decommissioning-related  
11   transportation energy consumption. The plan shall include but not be limited to the following  
12   measures:

- 13           1. Require that onsite equipment and vehicle operators minimize equipment and vehicle
- 14           idling time either by shutting equipment off when not in use or by limiting idling time to a
- 15           maximum of 5 minutes.
- 16           2. Designate a TEM to coordinate ridesharing by generation tie-line construction and
- 17           decommissioning employees. The TEM shall encourage carpooling by posting commuter
- 18           ride sign-up sheets and maintaining and posting an employee home zip code map.
- 19           3. Provide priority parking onsite for vehicles with two or more passengers.
- 20           4. When feasible, arrange for a single construction vendor who makes deliveries for several
- 21           items.
- 22           5. Plan construction delivery and waste hauling routes to eliminate unnecessary trips.
- 23           6. The plan shall be submitted to Kern County Planning and Natural Resources Department
- 24           for review and approval prior to the start of generation tie-line installation.

25   **Level of Significance after Mitigation**

26   Impacts would be less than significant.

# 1 **CHAPTER 6**

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## 2 **Organizations and Persons Consulted**

### 3 **6.1 Federal**

- 4 • Federal Aviation Administration
- 5 • Naval Air Weapons Station China Lake
- 6 • U.S. Air Force
- 7 • U.S. Army
- 8 • U.S. Army Corps of Engineers
- 9 • U.S. Bureau of Land Management
- 10 • U.S. Department of Agriculture, Natural Resource Conservation Service
- 11 • U.S. Environmental Protection Agency Region IX
- 12 • U.S. Fish and Wildlife Service
- 13 • U.S. Forest Service, Pacific Southwest Region
- 14 • U.S. Marine Corps
- 15 • U.S. Navy
- 16 • U.S. Postal Service

### 17 **6.2 Federally Recognized Tribes**

- 18 • Big Pine Paiute Tribe of the Owens Valley
- 19 • Bishop Paiute Tribe
- 20 • Chemehuevi Indian Tribe
- 21 • Colorado River Indian Tribes (CRIT)
- 22 • Fort Independence Paiute Indians
- 23 • Fort Mojave Indian Tribe
- 24 • Las Vegas Paiute Tribe
- 25 • Lone Pine Paiute-Shoshone Tribe
- 26 • Moapa Band of Paiutes
- 27 • Morongo Band of Mission Indians
- 28 • San Manuel Band of Mission Indians
- 29 • Santa Rosa Rancheria Tachi-Yokut Tribe

- 1 • Tejon Indian Tribe
- 2 • Timbisha Shoshone Tribe
- 3 • Tule River Tribe

### 4 **6.3 State of California**

- 5 • California Department of Conservation
- 6 • California Department of Fish & Wildlife
- 7 • California Department of Resources, Recycling and Recovery
- 8 • California Department of Water Resources, San Joaquin District
- 9 • California Energy Commission
- 10 • California Highway Patrol
- 11 • California Public Utilities Commission
- 12 • California Regional Water Quality Control Board, Lahontan Region
- 13 • California State Clearinghouse
- 14 • California State Lands Commission
- 15 • California State University, Bakersfield
- 16 • Caltrans District 6
- 17 • Caltrans District 9
- 18 • State Water Resources Control Board, Division of Drinking Water

### 19 **6.4 Regional and Local**

- 20 • Antelope Valley-East Kern Water Agency
- 21 • California City Planning Department
- 22 • Chumash Council of Bakersfield
- 23 • City of Arvin
- 24 • City of Bakersfield Planning Department
- 25 • City of Bakersfield Public Works Department
- 26 • City of Delano Planning Department
- 27 • City of Maricopa
- 28 • City of McFarland
- 29 • City of Ridgecrest
- 30 • City of Shafter
- 31 • City of Taft
- 32 • City of Tehachapi
- 33 • City of Wasco

- 1 • Eastern Kern Air Pollution Control District
- 2 • Inyo County Planning Department
- 3 • Kern Council of Governments
- 4 • Kern County Administrative Officer
- 5 • Kern County Agriculture Department
- 6 • Kern County Board of Supervisors
- 7 • Kern County Engineering, Surveying & Permit Services
- 8 • Kern County Environmental Health Services Department
- 9 • Kern County Fire Department
- 10 • Kern County Library, Beale Branch
- 11 • Kern County Library, Rosamond Branch
- 12 • Kern County Planning and Natural Resources Department
- 13 • Kern County Public Works Department
- 14 • Kern County Sheriff's Department
- 15 • Kern County Superintendent of Schools
- 16 • Kern County Water Agency
- 17 • Kern High School District
- 18 • Kern Valley Indian Council
- 19 • Kings County Planning Agency
- 20 • Los Angeles County Regional Planning Department
- 21 • Los Angeles Department of Water and Power
- 22 • Metropolitan Water Districts of Southern California
- 23 • Mojave Chamber of Commerce
- 24 • Native American Heritage Council of Kern County
- 25 • Pacific Gas and Electric
- 26 • Recurrent Energy
- 27 • San Bernardino County Planning Department
- 28 • San Francisco Public Utilities Commission, Energy Division
- 29 • San Luis Obispo County Planning Department
- 30 • Santa Barbara County Resource Management Department
- 31 • Southern California Edison
- 32 • Tulare County Planning Development Department
- 33 • Ventura County Resource Management Agency Planning Division



1 **CHAPTER 7**

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2 **Response to Comments**

3 This chapter is being reserved for, and will be included with, the final EIS/EIR.



1 **CHAPTER 8**  
2 **Abbreviations and Acronyms**

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3	1/4	one-quarter
4	AB	Assembly Bill
5	AB32	Assembly Bill 32
6	AC	alternating current
7	ACHP	Advisory Council on Historic Preservation
8	ACOE	Army Corps of Engineers
9	AD	Anno Domini
10	AFB	Air Force Base
11	AFCEC	Air Force Civil Engineer Center
12	AFFTC	Air Force Flight Test Center
13	AFI	Air Force Instruction
14	AFIs	Air Force Instructions
15	AFTC	Air Force Test Center
16	AFY	acre-feet per year
17	AICUZ	Air Installation Compatible Use Zones
18	ALUCP	Airport Land Use Compatibility Plan
19	APCD	Air Pollution Control District
20	APE	Area of Potential Effect
21	APLIC	Avian Power Line Interaction Committee's
22	AQAP	Air Quality Attainment Plan
23	ARB	Air Resources Board
24	ARPA	Archeological Resources Protection Act
25	ARTCC	Air Route Traffic Control Center
26	ATC	Air Traffic Control
27	AVAQMD	Antelope Valley Air Quality Management District
28	AVEK	Antelope Valley-East Kern
29	BBCS	Bird and Bat Conservation Strategy

1	BCC	Birds of Conservation Concern
2	BGEPA	Bald and Golden Eagle Protection Act
3	BLM	Bureau of Land Management
4	BMPs	best management practices
5	BO	Biological Opinion
6	BP	before present
7	CAA	Clean Air Act
8	CaCO <sub>3</sub>	calcium carbonate
9	CAFE	corporate average fuel economy
10	CARB	California Air Resources Board
11	CBC	California Building Code
12	CCAA	Clean Air Act of 1988
13	CCD	Census County Division
14	CCR	California Code of Regulations
15	CDFW	California Department of Fish and Wildlife
16	CDNPA	California Desert Native Plants Act
17	CDPs	considered Census Designated Places
18	CEC	California Energy Commission
19	CEQ	Council on Environmental Quality
20	CEQA	California Environmental Quality Act
21	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
22	CESA	California Endangered Species Act
23	CFR	Code of Federal Regulations
24	CH <sub>4</sub>	methane
25	CHL	California Historical Landmarks
26	CHP	California Highway Patrol
27	CHRIS	California Historical Resources Information System
28	CL	Cluster
29	CNDDDB	Fish and Game Natural Diversity Database
30	CNEL	Community Noise Equivalent Level
31	CNPS	California Native Plant Society
32	CO	carbon monoxide
33	CO <sub>2</sub>	carbon dioxide
34	COG	Council of Governments

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1	CPUC	California Public Utility Code
2	CRHR	California Register of Historical Resources
3	CSLC	California State Lands Commission
4	CT	Census Tract
5	CVC	California Vehicle Code
6	CWA	Clean Water Act
7	DERP	Defense Environmental Restoration Program
8	DOD	Department of Defense
9	DOGGR	Division of Oil, Gas, and Geothermal Resources
10	DPM	diesel particulate matter
11	DRECP	Desert Renewable Energy Conservation Plan
12	DTSC	Department of Toxic Substances Control
13	DWR	Department of Water Resources
14	ECCMP	Environmental and Construction Compliance Monitoring Plan
15	EIAP	Environmental Impact Analysis Process
16	EKAPCD	Eastern Kern Air Pollution Control District
17	EO	Executive Order
18	EPS	Emissions Performance Standard
19	ESA	Endangered Species Act
20	EUL	Enhanced Use Lease
21	FAA	Federal Aviation Administration
22	FAR	Federal Aviation Regulations
23	FAT	Yosemite International Airport
24	FEMA	Federal Emergency Management Agency
25	FESA	Federal Endangered Species Act
26	FFRMS	Federal Flood Risk Management Standard
27	FHWA	Federal Highway Administration's
28	FIRM	Flood Insurance Rate Maps
29	FONSI	Finding of No Significant Impact
30	FR	Federal Register
31	FTA	Federal Transit Administration's
32	GDP	Gross Domestic Product
33	GHG	greenhouse gas
34	GIS	geographic information system

1	GWP	Global Warming Potential
2	H <sub>2</sub> O	water
3	HAPs	total hazardous air pollutants
4	HFC	hydrofluorocarbons
5	HMBP	Hazardous Materials Business Plan
6	HMMP	Hazardous Materials Management Plan
7	HWMP	Hazardous Waste Management Plan
8	ICRMP	Integrated Cultural Resources Management Plan
9	INRMP	Integrated Natural Resources Management Plan
10	IPCC	Intergovernmental Panel on Climate Change
11	IS/NOP	Initial Study/Notice of Preparation
12	ISDD	Intermediate Storm Design Discharge
13	KCGP	Kern County General Plan
14	KCPD	Kern County Planning Department
15	KOP	Key Observation Point
16	KOPs	potential Key Observation Points
17	LACM	Museum of Los Angeles County
18	LADWP	Los Angeles Department of Water and Power
19	LOS	Level of Service
20	MARSA	Military Assumes Responsibility for Separation of Aircraft
21	MBTA	Migratory Bird Treaty Act
22	MCL	Maximum Contaminant Level
23	MDAB	Mojave Desert Air Basin
24	MMRCP	Monitoring, Reporting, and Compliance Program
25	MOUs	Memoranda of Understanding
26	MRZs	Mineral Resource Zones
27	MSAs	Metropolitan Statistical Areas
28	MSP	Mojave Specific Plan
29	MT	metric tons
30	MW	megawatts
31	N <sub>2</sub> O	nitrous oxide
32	NAAQS	National Ambient Air Quality Standards
33	NAGPRA	Native American Graves Protection and Repatriation Act
34	NAHC	Native American Heritage Commission

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1	NAS	National Airspace System
2	NASA	National Aeronautics and Space Administration
3	NCCP	Natural Communities Conservation Plan
4	NDAA	National Defense Authorization Act
5	NEHRP	National Earthquake Hazards Reduction Program
6	NEPA	National Environmental Policy Act
7	NF3	nitrogen trifluoride
8	NHPA	National Historic Preservation Act
9	NHTSA	National Highway Traffic Safety Administration
10	NO	nitric oxide
11	NO2	nitrogen dioxide
12	NOAA	National Oceanic and Atmospheric Administration
13	NOI	Notice of Intent
14	NOP	Notice of Preparation
15	NOP/IS	Notice of Preparation and Initial Study
16	NPDES	National Pollutant Discharge Elimination System
17	NRCS	National Resources Conservation Service
18	NRHP	National Register of Historic Places
19	O3	ozone
20	OEHHA	Office of Environmental Health Hazard Assessment
21	OHP	Office of Historic Preservation
22	OSD	Office of the Secretary of Defense
23	OWTS	offsite wastewater treatment systems
24	EIS/EIR	Program Environmental Impact Statement / Program Environmental Impact Report
25	PERP	Portable Equipment Registration Program
26	PFC	perfluorocarbons
27	PM10	Respirable Particulate Matter
28	PM2.5	Fine Particulate Matter
29	PNNL	Pacific Northwest National Lab
30	POUs	publicly owned utilities
31	PPV	peak particle velocity
32	PRC	Public Resources Code
33	PSD	Prevention of Significant Deterioration
34	PV	solar photovoltaic

1	R-2	Medium-density Residential
2	RCSD	Rosamond Community Services District
3	RE	Recurrent Energy
4	RFQ	Request for Qualifications
5	RHNA	Regional Housing Needs Allocation
6	RMS	root mean square
7	ROD	Record of Decision
8	ROGs	reactive organic gases
9	ROWD	report of water discharge
10	ROWs	Rights-of-Way
11	RPS	Renewable Portfolio Standard
12	RS	Residential Suburban
13	RTP	Regional Transportation Plan
14	RV	recreational vehicle
15	RWQCB	Regional Water Quality Control Board
16	SB	Senate Bill
17	SCAB	South Coast Air Basin
18	SCE	Southern California Edison
19	SCS	Sustainable Communities Strategy
20	SF6	sulfur hexafluoride
21	SGHAT	Solar Glare Hazard Analysis Tool
22	SHPO	State Historic Preservation Officer
23	SIPs	State Implementation Plans
24	SJVAB	San Joaquin Valley Air Basin
25	SO2	sulfur dioxide
26	SPCC	Prevention, Control, and Countermeasure
27	SR	State Route
28	SRAs	State Responsibility Areas
29	SSC	Species of Special Concern
30	SSJVIC	San Joaquin Valley Archaeological Information Center
31	SUA	Special Use Airspace
32	SWPPP	Storm Water Pollution Prevention Plan
33	SWRCB	State Water Resources Control Board
34	TACs	toxic air contaminants

1	TCR	Climate Registry
2	TEM	Transportation Energy Manager
3	TRACON	Terminal Radar Approach Control
4	U.S.C.	United States Code
5	USACE	United States Army Corps of Engineers
6	USAF	United States Air Force
7	USEPA	United States Environmental Protection Agency
8	USFWS	United States Fish and Wildlife Service
9	USGS	United States Geological Survey
10	USMC	United States Marine Corps
11	VOCs	volatile organic compounds
12	VRM	Visual Resource Management
13	WE	Wind Energy
14	WEMO	West Mojave Plan
15	WERS	West Edwards Road Settlement
16	WSSP	Willow Springs Specific Plan



# 1 **CHAPTER 9**

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## 2 **List of Preparers**

### 3 **9.1 Lead Agencies**

#### 4 **United States Air Force**

##### 5 **Edwards Air Force Base Civil Engineer Group**

6 Andrea Brewer-Anderson – Project Manager

##### 7 **Air Force Civil Engineer Center**

##### 8 **Air Force Judge Advocate, Contracting and Environmental**

##### 9 **Air Force Installation and Mission Support Center Det 6**

#### 10 **Kern County**

##### 11 **Kern County Planning and Community Development Department**

12 Lorelei H. Oviatt, AICP – Planning Director

13 Terrance Smalls – Supervising Planner

14 Janice Mayes – Planner III

### 15 **9.2 Technical Assistance**

#### 16 **Environmental Science Associates (ESA)**

17 Deanna Hansen – Project Director

18 Jason Ricks – Project Manager

19 Cristina Gispert – Deputy Project Manager

20 Carleen Sawires – Air Quality Analyst

21 Michael Bever – Archaeologist

22 Ryan Villanueva – Biologist

23 Shadde Rosenblume – Technical Analyst

24 Arabesque Said Abdelwahed – Technical Analyst

25 Brian Allee – Technical Analyst

26 Justin Hall – Technical Analyst

27 Lisa Maier – Technical Analyst

- 1 Paige Anderson – Technical Analyst
- 2 Aaron Weiner – Technical Analyst
- 3 Karen Calderon – Technical Analyst
- 4 Gary Gick – DEIR Document Preparation

5 **VisionScape Imagery, Inc**

- 6 Joe Font – Technical Analyst

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